

# REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

February 02, 2012

E-Mailed February 02, 2012

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RE: FPN: 416842-2-52-01  
Contract No: E7G19  
SR43 (US 301) From N. of SR 60 (Adamo Dr.) to S. of SR 574 (MLK Jr. Blvd.)  
Hillsborough County  
Regional Disputes Review Board Recommendation

Issue: Subcontractor Asphalt Straightedge Claim

Gentlepersons:

The Owner, Florida Department of Transportation (Department), and Contractor, Cone & Graham, Inc. (C&G), requested a hearing on the above issue in accordance with the Regional Dispute Review Board (RDRB) Specification:

C&G stated in its November 17<sup>th</sup> 2011 request:

*Cone & Graham, Inc. has recently completed and obtained Final Acceptance of the referenced Florida Department of Transportation project. Unfortunately, a dispute arose during construction between our Asphalt Paving subcontractor and the Department concerning straightedge requirements at various locations throughout the project. This is expanded on in the attached correspondence provided by Tampa Pavement Constructors, Inc.*

*We have followed the escalation criteria set forth in Specification 8-3.7.4, Regional Disputes Review Board and have been unable to resolve this dispute with the Department. Tampa Pavement Constructors has requested that this matter be referred to the Board for a ruling on entitlement. It is requested that we be provided a list of dates in January for which a three member Board can convene to hear this matter.*

Tampa Pavement Constructors, Inc.'s (C&G's asphalt subcontractor) attached letter to C&G of November 10<sup>th</sup> 2011 stated:

*We are disappointed in the response from the Department at our meeting October 27, 2011. We still have every intention to seek recovery to some or all of our expenses to fix joint tie-ins on the bridges and Rolling Straightedge Deficiencies on vertical curves. We are requesting Cone & Graham, Inc. forward to the Department our request to convene the Disputes Review Board. We are now preparing to move this issue to the next level in hopes of gaining the outcome we feel deserving to Tampa Pavement Constructors, Inc. **We are seeking compensation for the repairs to fix the multiple asphalt tie-ins to the irregular epoxy header joints over 2 bridges and the 3 locations on vertical curves (L-1 STA 111+11 to STA 111+07, L-1 STA 111+68 to STA 111+70, and R-2 STA 113+49 to STA 113+55) that the latter 3 locations were 4/16" after placing FC~5 initially, that we were directed to fix.** (emphasis added)*

*We would like to meet with the DRB and explain the issues and facts as we see them. Please notify us of when we can meet to tile issues with the DRB.*

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Pertinent issues, correspondence and other information relating to the Department's and the Contractor's positions were forwarded to this Board for review and discussion at the hearing that was held on January 27<sup>th</sup> 2012. Should entitlement be established, the RDRB was not to decide the quantum of such entitlement at this time, as the parties would attempt to negotiate the value of entitlement.

### **CONTRACTOR'S POSITION:<sup>1</sup>**

#### *Issue Statement:*

*The issue is directly related to asphalt pavement smoothness, as determined by the use of the Rolling Straightedge, at the asphalt pavement tie-ins to the Epoxy Header bridge expansion joints. The project required the milling and resurfacing of the asphalt pavement on 2 bridge decks that have several epoxy header expansion joints. The Department of Transportation required smoothness testing of the completed surface with the Rolling Straightedge, and has held Tampa Pavement Constructors to a 3/16" surface tolerance. The existing Epoxy Header joints on these bridge decks were to remain in place. An examination of the existing joints showed that they were significantly wavy and rutted. Tampa Pavement Constructors did not expect to be held to these tight tolerances as we will present in these documents. Numerous attempts were made to match the existing joints and meet the 3/16" pavement smoothness tolerance. The Department eventually accepted the project even though many areas still did not meet the 3/16" tolerance and we were assessed penalties accordingly. Additionally rework was required in some areas on the approaches to the bridges due to smoothness test results not meeting the specification requirements. These areas as well as the two bridges themselves lie within vertical curves. We are of the opinion that the vertical curves negatively contributed to the Rolling Straightedge test results. The costs involved in reworking these areas were excessive and we, Tampa Pavement Constructors, Inc. requested compensation for the expenses incurred, after evaluating the existing conditions and design that were beyond our control. The Department has rejected our request for compensation. Therefore, we request the DRB review our position and provide a recommendation regarding entitlement.*

#### **INTRODUCTION & SUMMARY:**

*Tampa Pavement Constructors, Inc. (TPC) has made efforts to resolve the issue resulting from the amount of (and expenses incurred) as a result of excessive rework, required to meet the FDOT mandated tolerances, for the Rolling Straightedge on this project. We have met with the Department of Transportation representatives, escalating this issue to the level of the District Construction office, without resolving the issue.*

*TPC, as a subcontractor to Cone and Graham, was responsible for the milling and resurfacing of the roadway on this project.*

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<sup>1</sup> For exhibits or pages referenced the reader should refer to the Parties full position papers.

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*There are two bridges within the project limits, which contained an asphalt overlay that was to be milled and resurfaced (Bridges 100910 and 100011). Both of these bridges have several epoxy header expansion joints. TPC did not anticipate being held to the Roadway standard 3/16" tolerance, as measured by the Rolling Straightedge, on the bridge decks because of the following:*

- The project plans state that the existing epoxy header joints are to remain in place (refer to Plan Sheet 7 in (Tab 1). There are 6 joints on one bridge and 7 joints on the other bridge deck. Each Epoxy Header Joint has 2 sides, 1 on each side of the expansion material. In total there are 52 joints to tie into (2 lanes x 13 joints x 2 headers). The condition of the existing Epoxy Header Expansion Joints was beyond the control of TPC.*
- In the Approved Flexible Pavement Design Package for the project, especially in the Background Information, pages 4 and 5, there is no mention of epoxy header joints on the bridges. Also within the design package, Design Notes, careful attention was given to depths of milling and resurfacing along with any required cross slope corrections. No reference to the existing Epoxy Header Joints on the two bridges is mentioned. In the Design Notes, on page 26, Travel Lane Milling & Resurfacing (including approach slabs), the designer clearly identifies what work will be done regarding milling and resurfacing, mill (2.25" avg.), resurface with TLD 12.5 76-22 (1.50" thick) and FC-5 76-22 (0.75" thick). Further down the same page, the two bridges 100910 & 100011 are to have the same milling and paving depths as mentioned for the travel lanes. Nowhere in these descriptive areas of work or in the 10 notes that follow does the design package address the existing epoxy header joints on the two bridges. The only concern in the design package, appears to be regarding cross slope, and the 2 superelevated curves which do not comply with FDOT nor ASHTO Standards, which the Department has chosen, due to cost, to seek exemptions for.*
- The project plans called for milling and resurfacing consisting of milling to an average depth of 2 ¼" and replacement with 1 ½" of SP Structural Course (Traffic level D) (PG 76-22) and ¾" Friction Course (FC- 5). Refer to plan sheet 5 in (Tab 1). Per the "Milling Detail For Asphalt Bridges and Approach Slabs" refer to plan sheet 7 in (Tab 1) TPC was required to match the existing epoxy header joints.*
- The epoxy header expansion joints were spaced between 32' 10" and 49' 6" 9 (Refer to the existing bridge sheets EB4 and EB14 in (Tab 2). TPC was of the belief that each bridge span (between expansion joints) was essentially a separate structure and would not be held to the tolerance as allowed by Specification Section (as included in the project Supplemental Specifications, Tab 3) 330-12.4.5.2.*
- The bridge joints were also skewed with respect to the centerline of the roadway, further adding to our belief that each bridge span was essentially a separate structure.*

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*Additionally, the roadway leading up to and descending from each bridge is a crest vertical curve. Several deficiencies were indicated by the Rolling Straightedge in these areas. A vertical curve, as we will illustrate later in this document, contributes a geometric negative error to the results obtained with the Rolling Straightedge. This error should have been considered by the Department when interpreting the results from the Rolling Straightedge.*

*TPC's work came at the end of the contract period and needed to be completed in a timely manner to avoid the potential of liquidated damages being assessed to the prime contractor. When TPC was made aware of the Department's expectations, we proceeded with many attempts to meet the Department's requirements. Although verbal discussions occurred on the project during the repairs, regarding the excessive number of repair attempts and the cost to TPC, TPC proceeded under the assumption that it was our sole responsibility to complete the work to meet the requirements. To support attempts to satisfy the Department, TPC enlisted the help of our corporate Technical Manager, Barry McKeon. Our most experienced Asphalt Construction Manager, John Stanton from Atlantic Coast Asphalt was also brought in to assist with the remainder of the repair attempts.*

*After multiple repair attempts, several areas still are not within 3/16" acceptable tolerance as the Department contends they should be per specification 330-12.4.5.1. The Department finally accepted these areas after all repair attempts were exhausted and their requirement still could not be achieved. A penalty has been assessed in accordance with Standard Specification 330-12.5.2 for these areas.*

*When the project was finally accepted (with some areas deviating from the 3/16" tolerance by the same amount as the original test results deviated in some areas), it became apparent that many of the areas which were repaired would have been accepted prior to any repairs, had the same final acceptance criteria been applied by the Department earlier. As a result TPC was of the opinion that excessive costs had been incurred while adding no added (and potentially negative – due to the increased number of joints in the friction course) benefit to the project. The Department was then provided a Notice of Intent to File Claim.*

*TPC has previously submitted a cost summary to the Department in our claim package that identifies the magnitude of the repairs. The repairs took 12 days total with 2 days at no charge, for Rolling Straightedge corrections we felt were necessary. Our submitted claim package to the Department itemized all Labor, Equipment, Material and Subcontractor costs. The claim package included QC results, Project specifications, relevant plan sheets, correspondence, a cover letter explaining the claim and the certified letter from Mr. Fred O'Dea Jr. Should the DRB decide that TPC is entitled to compensation, we will attempt to resolve the financial impact with the Department.*

*In this document TPC will present our data to support our belief that:*

- The asphalt on the bridge decks should be exempt from the 3/16" tolerance with the Rolling Straightedge.*
- Geometric factors contributed negatively to the observed results from the Rolling Straightedge.*

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### **PROJECT BACKGROUND INFORMATION:**

*The project E7G19, FIN 416842-2-52-01 was primarily a rehabilitation project involving the retrofit of concrete railing walls on 3 separate bridges between SR 60 on the south end to MLK SR 574 on the north end. The letting date was June 9, 2010. Cone and Graham, Inc. was awarded the contract as the prime contractor. The base contract amount was \$1,421,762.08. Work began on the project August 16, 2010. The original project duration was 240 calendar days. The project was completed in 289 calendar days (May 31, 2011) with approved time extensions. No Liquidated Damages were assessed on the project. The final project cost was \$1,449,908.08 with the approved final quantities.*

*There were many subcontractors performing specialty work on the project. Minor specialty items of work included upgrading guardrail at the bridges to meet current Federal and State Standards, Milling and Paving both sides (approach and departure) to the 3 bridges, and milling and paving the bridge deck on two bridges in the south bound direction. New vehicle count assemblies were added, and new signs placed, as part of the contract.*

*The 2010 Standard Specifications For Road and Bridge Construction, and the 2008 FDOT Design Standards (with 01/01/10 Design Standard modifications) were applicable to the project as amended by the contract documents.*

*There were no major problems with the execution of the project that we, Tampa Pavement Constructors, Inc. were aware of, other than the current issue presented herein.*

### **DISPUTED ISSUE:**

*The disputed issue before the Board is Tampa Pavement Constructors entitlement to compensation for numerous repair attempts to correct Rolling Straightedge deficiencies.*

*This issue has been discussed with the Department and escalated to the District Construction office without resolution.*

*The milling and resurfacing on this project presented several difficult paving challenges. Foremost was the milling and resurfacing of the bridge decks on two bridges (100910 and 100011) in the southbound lanes. The existing bridges consisted of a concrete bridge deck which had been overlaid with asphalt structural course and friction course. These two bridges contained a total of 13 expansion joints which consisted of two Epoxy Header Curbs (one on either side of each joint) which were poured in place after the existing asphalt surface was constructed. (Tab 8) contains photos of some of these joints prior to the start of construction. These photos are captures from the Preconstruction video shot by the Department prior to construction. (Tab 8) also includes a CD with clips from the Department's video showing the condition of the existing bridge deck and joints. Evidence of some epoxy splatter on the existing asphalt surface substantiates that the Epoxy Header curbs were constructed after paving of the deck. Per the plans, sheet 7 refer to (Tab 1), the Epoxy Header Curb expansion joints, were to remain in place, in existing condition, and Tampa Pavement Constructors, Inc. (TPC) was*

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*required to mill and inlay SP Structural Course Traffic Level D 12.5 (76-22) and then place FC-5 (76-22) Friction Course flush to each expansion joint. (Tab 7) and (Tab 8) contain photos of some of these joints. It is clearly evident that the existing header curbs are uneven and significantly rutted. The new Friction course was required to meet these header curbs flush.*

*An additional challenge on these two bridges was that all the bridge joints were skewed and were spaced from 32' 10" to 49' 6" apart. The skew angle on Bridge 100910 is 106°22' and on Bridge 100011 72°17'30". Refer to plan sheets EB4 and EB 14 in (Tab 2). The skew angles required a significant amount of hand work within the skew refer to Figure 1 in (Tab 7). Additionally the paver used was 22'1" long. This resulted in extremely short pulls before the paver tires reached the next joint thus affecting the screed. We could not pave across these expansion joints with the paving machine nor utilize electronic sensors. The irregular transverse surface on the Epoxy Header Curbs required us to pick up the paving machine and work by hand, both sides of each expansion joint. In addition to this, FC-5 (76-22) is extremely difficult to work by hand due to the rapid heat loss and characteristics of Polymer Modified Asphalt Cement. Significant handwork was required to transition the flat plane of the new friction course into the uneven and rutted header curbs.*

*TPC was aware of these challenges when bidding the project, but fully expected that each bridge span would be considered a bridge structure with each bridge joint (expansion joint) being exempt from Rolling Straightedge testing.*

*In addition, there are vertical curves beginning before and ending after each of the bridges that influence the Rolling Straightedge results. This issue is presented later in our position. The vertical curves contribute a negative influence on the Rolling Straightedge results and this influence should have been considered when analyzing and reporting the test results.*

*Both the irregular bridge joints and the vertical curves are factors beyond the control of the contractor. The bridge joints should qualify as straightedge exceptions. Additionally the effect of the vertical curves should have been considered when analyzing test results. The Department has disagreed with our opinion and as a result TPC had to remove and replace a significant amount of pavement in an attempt to correct the straightedge deficiencies. In the end, the final pavement was accepted even though many deficiencies still existed. Many of the finally accepted areas were no better than before corrections were made. Therefore we feel many of the corrections could have been avoided or were not required at all. TPC feels that we are entitled to compensation for some of the rework performed to correct straightedge deficiencies for the reasons stated above.*

### **RELEVANT CONTRACT PROVISIONS:**

*Relevant Contract Provisions to our issue are several pages of the Project Plans, the Flexible Pavement Design Package and the Project Specifications.*

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*Included in this document are:*

*Plan sheets: #1, #2, #3, #4, #5, #6, #7, #8, #18, #19, #20 and #21 (Refer to Tab 1)*

*Existing bridge plan sheets: EB4 and EB14 (Refer to Tab 2)*

*Specification Package: FIN 416842-2-52-01, Section 330 (Refer to Tab 3)*

*Flexible Pavement Design Package (Refer to Tab 4)*

## **PRESENTATION OF THE FACTS:**

*Vertical Curves:*

*As mentioned previously both the approach to and descent from each of the two bridges (including the bridge decks) lie within vertical curves. These curves are discussed and data given in the Flexible Pavement Design Package refer to (Tab 4).*

*The Rolling Straightedge is a 15' reference beam, with a spring loaded moveable wheel in the center attached to an indicator dial. As the Rolling Straightedge is pulled along a section of roadway, the center wheel will move up and down following fluctuations in the pavement relative to the 15' beam. The dial indicator is calibrated in 1/16" increments.*

*In a typical roadway section the pavement should be flat as shown in Figure 1 in (Tab 6). The Rolling Straightedge is essentially a line parallel to the roadway surface. With no high or low spots in the pavement, the dial indicator should be centered in the display. Please note that the dial indicator is shown as it would appear if you were walking along behind the Rolling Straightedge.*

*A Vertical Curve is a parabolic curve in the roadway profile, used to increase (Crest Vertical Curve) or lower (Sag Vertical Curve) the elevation of the roadway. Slight changes in elevation using Vertical Curves yield a negligible effect on the Rolling Straightedge. As the change in elevation accomplished with the Vertical Curve increases, the affect of the curve on the Rolling Straightedge increases. In a Vertical Curve the Rolling Straightedge is not parallel to the roadway surface, but is parallel to a chord of equal length (15') in the parabolic curve. As a result, in a crest Vertical Curve, the Rolling Straightedge will indicate a "High" reading as illustrated in Figure 1 in (Tab 2). Likewise, a Sag Vertical Curve will contribute to a "Low" reading. It must be noted that in Florida, Sag Vertical Curves are relatively shallow (less change in elevation) than Crest Vertical Curves, therefore the affect on the Rolling Straightedge is typically negligible.*

*On this project, significant Crest Vertical Curves exist. TPC has plotted the Vertical Curves refer to (Tab 6) within the project limits, based upon this information. An enlarged view of each curve has been provided so the elevation data is more legible. From this information it is possible to calculate the difference in elevation between the roadway surface and the 15' chord in the parabolic curve which is parallel to the Rolling Straightedge.*

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*The elevation of the midpoint of the 15' chord is the average of the elevations at each end. For example:*

*The elevation at Station 111+42.5 is 125.078*

*The elevation at Station 111+57.5 is 125.400*

*The elevation of the midpoint of the chord is:*

$$(125.078 + 125.400) / 2 = 125.239$$

*The difference between the roadway elevation at the midpoint between these two points and the chord elevation is the result we are looking for.*

*Elevation at Station 111+50 is 125.243*

$$125.243 - 125.239 = 0.004'$$

*Repetition of these calculations for all the elevations provided in (Tab 6) yields the same value when rounded to the thousandth of a foot.*

*This is equivalent to approximately 1/16" (0.005'). It is important to understand that this is a design vertical curve. The data represents the design of the curve along the centerline of US 301. During construction slight variations in elevation occur and are allowed in the final product. These variations will affect the elevation difference. If a 15' section of the roadway is constructed flatter than the design vertical curve, at some point along the curve a steeper curve will be needed to result in the correct final elevation at the peak of the curve. Thus if a 15' section is constructed totally level, a 15' section with double the steepness (2/16") would offset it.*

*No detailed as-built data on the existing roadway was supplied as part of the contract documents. It can be assumed that the difference in elevation between the existing roadway and the 15' chord could be as great as 2/16". This impact registers as a HIGH reading on the Rolling Straightedge. Therefore an area which shows a deficiency of 5/16" high might actually only be 3/16" high when consideration is given for the vertical curve.*

*Another indication of the effect of the vertical curve is when an indicated deficiency extends longer than the length of the straightedge. Referring to the videos contained on the CD in (Tab 9), TPC performed Rolling Straightedge testing on the outside lane of the south bridge (100910) and video taped the results. Video MVI\_3251 is a demonstration of how the straightedge should react in an area which has a high spot. The straightedge was rolled across a piece of rubber we used to simulate a bump in the roadway. When the center wheel encounters the high spot the dial indicator reads HIGH and then returns to the center position. As the rear wheels of the straightedge encounter the high spot they are elevated and the indicator indicates a LOW spot.*



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Video MVI\_3249 was filmed in L2 heading south descending from bridge 100910. It can be seen that the indicator dial is consistently showing 1/16" to almost 3/16" HIGH along the entire descent. This clearly indicates the effect of the vertical curve.

Video MVI\_3253 was filmed in R2 heading north from Station 112 on the concrete bridge deck and then descending down from the bridge. With the exception of joints which were encountered, the Rolling Straightedge again consistently is showing a HIGH reading.

Video MVI\_3243 was filmed in L2 on bridge 100910 to show how the straightedge reacts when it encounters a true HIGH or LOW situation at the bridge joints. Again between joints the reading is still consistently HIGH.

### *Effect of Vertical Curves of Rolling Straightedge Results:*

Copies of all Rolling Straightedge reports for the project are included in (Tab 5). This data has been entered into two spreadsheets Structural Asphalt Straightedge Deficiencies and Asphalt Friction Course Straightedge Deficiencies which can be found in (Tab 6). If the effect of the vertical curve was considered on the structural course and an allowance of 2/16" was allowed for the curve effect, 8 of the 11 straightedge deficiencies (highlighted in green) would have been acceptable and removal and replacement of the structural course would not have needed in these areas.

$$2/16'' \text{ allowance for vertical curve} + 3/16'' \text{ allowable deficiency} = 5/16''$$

On the Friction Course if allowance had been similarly made for the vertical curve, 29 out of 37 deficient results (which lie within the vertical curves, but are not within 15' of the bridges or on the bridges) would have been acceptable. These numbers include deficiencies which remained as a result of other repairs. Many areas would not have needed to be repaired at all if they had been accepted the first time.

Friction Course Paving began April 10, 2011 and concluded on April 14, 2011. The areas paved are as follows:

April 10, 2011: STA 196+05 to STA 212+90

April 11, 2011: STA 196+05 to STA 212+90, STA 165+50 to STA 174+80

April 12, 2011: STA 165+50 to STA 174+80

April 13, 2011: STA 104+77 to STA 117+02

April 14, 2011: STA 104+77 to STA 117+02

After completion of the FC-5 on April 14, 2011, the FDOT inspector, Robert Graves waived the Rolling Straightedge testing across the bridge decks as he did with the structural layer, stating that these were

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*considered structures. It was also acknowledged that the bridge sections were independent structures. This was consistent with TPC's belief and assumptions when we bid the project.*

*The next day a different inspector was on the jobsite (KC Stellitano) and we were informed that we needed to check the Friction Course on the bridge decks and over the expansion joints with the Rolling Straightedge in both wheel paths. The Rolling Straightedge (RSE) was completed indicating numerous deficiencies in both wheel paths. The deficiencies were the result of both the effect of the Vertical Curve and trying to match the rutted and uneven Epoxy Curb Headers. Contract time was almost out and the Department had informed us that we would be held to the 3/16" allowable deficiency in all areas so Tampa Pavement Constructors, Inc. remobilized to make corrections and repairs.*

*Below is a list of events, including meetings that subsequently took place:*

<i>April 26, 2011</i>	<i>Removed and replaced Friction Course in 2 locations in R-2 (STA 113+34 to STA 117+00) and 7 locations in L-1 (STA 113+97 to STA 110+52)</i>
<i>April 27, 2011</i>	<i>Removed and replaced Friction Course in same locations as on April 26, 2011 (2<sup>nd</sup> attempt)</i>
<i>April 28, 2011</i>	<i>Removed and replaced Friction Course in 2 locations in R-2 (STA 113+34 to STA 117+00) (3<sup>rd</sup> attempt)</i>
<i>May 1, 2011</i>	<i>Removed and replaced Friction Course in 2 locations in R-2 (STA 113+34 to STA 117+00) (4<sup>th</sup> attempt), and 2 locations in L-2 (STA 114+68 to STA 110+90) included shoulder repair</i>
<i>May 2, 2011</i>	<i>Repaired 3 locations not related to bridge joints</i>
<i>May 3, 2011</i>	<i>Meeting was held at the FDOT Tampa office to review the issues (another meeting was scheduled with Bartow and the D-7 engineers)</i>
<i>May 4, 2011</i>	<i>Onsite meeting with FDOT Project Administrator, Engineers, Tampa Resident and District Materials.</i>
<i>May 8, 2011</i>	<i>Removed and replaced Friction Course in 7 locations in L-2 (STA 110+90 to STA 114+02) (2<sup>nd</sup> attempt)</i>
<i>May 9, 2011</i>	<i>Removed and replaced Friction Course in 3 locations in L-2 (STA 110+60 to STA 112+44)(3<sup>rd</sup> attempt), and 1 location R-2 (STA 113+34 to STA 114+71)(5<sup>th</sup> attempt)</i>
<i>May 10, 2011</i>	<i>Removed and replaced Friction Course in 5 locations in L-1 (STA 168+61 to STA 171+80)</i>
<i>May 11, 2011</i>	<i>Removed and replaced Friction Course in 8 locations in L-2 (STA 168+61 to STA 171+80)</i>
<i>May 18, 2011</i>	<i>Removed and replaced Friction Course in 2 locations in R-2 (STA 113+34 to STA 114+71) (5<sup>th</sup> attempt at bridge joints) and shoulder repair (STA 171+48 to STA 169+07)</i>
<i>May 19, 2011</i>	<i>Removed and replaced Friction Course in 4 locations in L-1 (STA 171+27 to STA 169+84) (2<sup>nd</sup> attempt) This time replaced with FC 12.5, no deficiencies were recorded and work was accepted after paving this area. Also corrected 1 location in L-2 (STA 110+57 to STA 111+74), by milling 2.25" and placing 1.50" TLD 12.5 (76-22) and FC-5 (76-22). FDOT agreed to pay for this repair.</i>

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May 23, 2011	<i>Repaired 2 locations: 1<sup>st</sup> location R-2 (STA 113+34 to STA 114+71) (6<sup>th</sup> attempt at bridge joints). FDOT accepted, after cutting out structural asphalt and replacing with TLD 12.5 (76-22) and FC-5 (76-22). This repair and the asphalt would be paid for by FDOT, per the Project Administrator, however there is no evidence in the project estimates of payment for this repair or the 2<sup>nd</sup> location, L-2 (STA 111+74 to STA 110+57) repaired on May 19th. Both of these locations are in vertical curves and both measured 4/16" high on the first attempt.</i>
June 6, 2011	<i>Notice of Intent to file a claim was sent Cone &amp; Graham</i>
August 18, 2011	<i>Claim Package delivered to Cone &amp; Graham</i>
October 27, 2011	<i>Meeting was held at District 7 office to discuss the claim</i>

*As stated above, the repairs continued for 12 work shifts until the Department was satisfied that TPC had performed the repairs to the best degree possible, although many deficiencies in excess of 3/16" still remained. The last paving day was, May 23, 2011.*

*When the final accepted pavement still contained deficiencies equivalent to some of the original deficiencies prior to beginning any repairs it became apparent to TPC that a lot of the repairs would not have been necessary if the final acceptance criteria had been applied to the original paving. Referring to the Asphalt Friction Course Straightedge Deficiencies spreadsheet in (Tab 6), many of the deficiencies on the bridge decks were less than 5/16" (Green highlight in the Amount of Deficiency column and Red in the Deficiency On Bridge column). If allowance had been made for the vertical curve many areas would not have had to be continually reworked.*

*Several other items are noteworthy to mention.*

*When the Department made the decision to require the use of the Rolling Straightedge on the bridge decks, we were instructed to straightedge both wheel paths, when the specification 330-12.4.2 Test Method: specifically identifies the "outside wheel path" only. We acknowledge that the specifications allow the Department to test anywhere they choose and they did require the additional RSE testing. The test results further identified the cause of the problem as the irregular Epoxy Header Curbs at the expansion joints. Tab G contains several photos showing the irregularities in these header curbs. Many of the RSE reports (Tab 5) contain notes at the bottom identifying the irregularities in these curbs, with significant deviations exceeding 1/2" in areas. Yet the Department continued to insist the pavement meet a 3/16" tolerance, in each wheel path.*

*After the on-site meeting on May 4, 2011 a new acceptance procedure was adopted, requiring only the right wheel path be tested and only with a Rigid Straightedge. It should be noted that even the Rigid Straightedge is affected by the Vertical Curves.*

*Prior to beginning the repairs on the bridge decks at the expansion joints, TPC requested via e-mail, to use a dense grade FC-12.5 or FC 9.5, in lieu of the FC 5 in hopes of achieving better straightedge results. The dense*

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*graded mixes are better suited for use in areas with significant handwork. As mentioned elsewhere this handwork was necessitated by both the need to match the irregular and rutted header curbs, but also because of the skew angle of the joints. This request was denied. After numerous repair attempts, the Department allowed a deviation from the design and TPC placed FC 12.5 in a limited location in L-1 STA 171+27 to STA 169+84. If our initial request to do this had not been denied, several repair attempts would have been avoided.*

*The Department was aware of the multiple times (six (6) in some locations) that repairs were attempted and we were instructed to re-mill and re-pave. Each time TPC finished the area(s) in question, it was determined by FDOT that the work was still deficient and TPC was instructed to correct again and again.*

*Our belief is the FDOT directives to continue to fix areas over and over again were clearly outside the interpretation of the specification 330-12.4.5.2 refer to (Tab 3), "Straightedge Exceptions". The combination of the irregular and rutted Epoxy Header Curbs and the short spans between joints (each span is a separate bridge structure) clearly falls within the specification language, "The Engineer may waive straightedge requirements for transverse joints at the beginning and end of the project, at the beginning and end of bridge structures, at manholes, and at utility structures if the deficiencies are caused by factors beyond the control of the Contractor, as determined by the Engineer." Our position simply is these areas should have been subjected to 3/8" tolerances, also mentioned in 330-12.4.5.2.*

*Additionally the negative effect of the vertical curve on the RSE test results constitutes a geometric orientation which affects the accuracy of the results. Per 330-12.4.5.2, "In addition, the Engineer may also waive the straightedging requirements on ramps and superelevated sections where the geometrical orientation of the pavement results in an inaccurate measurement with the rolling straightedge." Although the roadway through the vertical curves and over the bridges was not a ramp or a superelevated section, the remainder of the specification applies. At a minimum the Department should have considered the effect and allowed for it when interpreting the RSE readings.*

### **CONCLUSION AND REQUEST FOR ACTION:**

*The Department has in meetings mentioned that we, TPC, did not give timely notice of intent to file a claim as specified in 5-12. Our contention is we assumed sole responsibility for meeting the Department's expectations until the expectations became unattainable. As we approached the last couple of days of paving on the project, the Department, #1) allowed a change in material type to FC 12.5 for some sections and 2) changed the acceptance requirements with regards to the Rolling Straightedge. Areas which originally had to be corrected would have been acceptable using the new acceptance criteria. At this point it became evident that we were entitled to compensation for our efforts and prepared our notice.*

*We operated in good faith assuming at first these repairs were the sole responsibility of TPC. After being informed that the Department wished us to meet the 3/16" tolerance on all mainline milling and resurfacing and several attempts to repair the same deficiency areas, which continued to fail the Rolling Straightedge, but were finally accepted we felt that we were entitled for compensation. The documents show that the transverse*

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

*epoxy header joints are irregular and deviate as much as 1/2" when measured transversely making many impossible to match and still meet the 3/16" specification tolerance. We had asked for an interpretation of the specification to be reviewed. The request was to look at 330-12.4.5.2 Rolling Straightedge Exceptions: The Department had several options with respect to the interpretation.*

- *The transverse joints are 35 feet apart on a skew. The specification allows for a deficiency of 3/8" (6/16") in some areas. The specification is included in (Tab 3). FDOT has denied these 35 foot areas to meet the exception criteria because these areas fall within the main line travel. The Department concluded that these small 35 foot skewed areas do not qualify as exception areas.*
- *These small areas could not be paved continuously and each 35 foot segment of the bridge is an individual structure. Each area is a stop and go paving event with a tremendous amount of handwork at both ends of the asphalt paving pull, and the short pulls exclude the use of electronic grade control. Each span is a separate bridge structure and the Department could have granted exceptions for each joint.*

*Contract time was drawing to a close. TPC inquired as to the possibility of additional contract time being granted so we could take the time to assess the problem and try to formulate the best approach to achieve a solution. We were informed that no additional contract time would be granted. There are flexible concrete bridge joint reconstruction procedures that could have been utilized. Information on some of these options is included in (Tab 10).*

- *The existing joints could have been paved over and then allowed to crack on their own. Although this is not the best solution it would have allowed us to pave across the bridge in a continuous operation.*
- *The existing epoxy header joints could have been removed and then the asphalt pulled in a continuous operation across the joint. After the paving is complete, the asphalt is cut back on either side of the joint and a joint system installed. Examples of this process are WaboCrete and the X.J.S system. The X.J.S. system has been extensively used on the Florida Turnpike and a plan sheet has been provided illustrating the process.*

*With no relief regarding contract time, TPC was not able to investigate the economic feasibility of using one of these joint systems. Therefore TPC was forced to spend money performing repeated removal and replacements, when the removal and replacement of the existing joints may have been a less costly solution and actually provided the Department with an enhanced project (new bridge joints and a smoother ride).*

*Tampa Pavement Constructors, Inc. (TPC) has made efforts to resolve this dispute but has reached an impasse with the Department. TPC has provided a cost summary to the Department in our claim package that identifies the magnitude of the repairs. We have submitted for the Department's review all Labor, Equipment, Material and Subcontractor costs itemized. In addition, the claim package included QC results, Project specifications, relevant plan sheets, correspondence, a cover letter explaining the claim and the certified letter from Mr. Fred*

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

*O'Dea Jr. The Department has stated that they see no merit to our position and feel we are not entitled to any compensation.*

*To summarize our position, the existing conditions of the Epoxy Header Curbs combined with the short pulls between skewed joints made it impossible to meet the 3/16" tolerance on the bridge decks. Additionally the Vertical Curves were an existing geometric condition which negatively impacted the results of the RSE. This should have been considered by the Department when analyzing the test results. Tampa Pavement Constructors, Inc. has been forced to endure monetary hardship as a result of repeated rework. We contend the Department's design should have recognized the problems which would result from the irregular joints and addressed the issue or provided notes clarifying the specifications or the results expected.*

*We ask that the Disputes Review Board carefully consider our presentation and the supporting documents and rule in favor of entitlement to compensation for our repeated repairs.*

### **DEPARTMENT'S POSITION:**

#### **Request for Ruling:**

*The Department requests that the Regional Disputes Review Board rule that the Contractor and Subcontractor are bound by the Contract Documents as applied by the FDOT for Rolling Straightedge Deficiencies.*

*This project called for milling the main line including the two southbound bridges and placing 1.5 inches of structural asphalt and 0.75 inches of open graded friction. After placement of the friction course, there were numerous areas that did not meet rolling straight edge requirements. The Contractor in accordance with the contract repaired the straight edge deficiencies throughout the project limits. It took four attempts in some areas to meet the contract requirements.*

*On August 23, 2011, the Contractor submitted a certified claim requesting \$188,208.19 to repair straightedge deficiencies covering their second through fourth attempts. This claim was denied through a letter dated October 21, 2011. (Pages 19 through 24). In fact it should be noted that the number and severity of deficiencies reduced significantly with each repair attempt. Additionally, it is important to note that the Intent to Claim was not submitted to the Department until June 6, 2011. The last date of paving was May 23, 2011.*

*Notice of Intent to Claim which is a condition precedent to entitlement any claim as stated in specification 5-12.2 Notice of Claim:*

**5-12.2.1 Claims For Extra Work:** *Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall notify the Engineer in writing of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension*

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

*pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay.*

*None of the issues raise in their claim is an unforeseen condition(s). The vertical curve and epoxy headers are exposed and a known condition at the time of bid. In fact, there is a plan note on Plan Sheet 7 that is quantified as “Contractor shall take precautions to prevent damage to the existing concrete approach slab, bridge, deck and epoxy header curb.” This should have given the Contractor notice that they needed to plan to work carefully in the bridge area. The specifications for rolling straightedge deficiencies were correctly applied.*

*Additionally, much of the certified claim is requesting compensation for repairs that were not in the Bridge areas where these alleged unforeseen conditions exist (54% of repairs not on bridges).*

*Finally, and most importantly, The Department enforced the contract fairly, consistently and appropriately. Numerous complaints were received from the public regarding roughness of the ride after each attempt by the Contractor until the final attempt. The straightedge deficiencies improved significantly after each attempt.*

### **Specifications which apply to the Issue:**

#### **Article 2-4 Examination of Contract Documents and Site of Work.**

#### **EXAMINATION OF CONTRACT DOCUMENTS AND SITE OF WORK.**

**(REV 2-7-08) (FA 2-13-08) (7-08)**

**ARTICLE 2-4 (Page 12)** is deleted and the following substituted: **2-4 Examination of Contract Documents and Site of Work.** *Examine the Contract Documents and the site of the proposed work carefully before submitting a proposal for the work contemplated. Investigate the conditions to been countered, as to the character, quality, and quantities of work to be performed and materials to be furnished and as to the requirements of all Contract Documents. Direct all questions to the Department by posting them to the Department’s website at the following URL address: [www2.dot.state.fl.us/construction/bid/question main. asp](http://www2.dot.state.fl.us/construction/bid/questionmain.asp). Questions posted to this site before 5:00 P.M. (EST) on the seventh calendar day prior to the bid opening will be responded to by the Department. For questions posted after this time, an answer cannot be assured. For all questions posted before the deadline, the Department will provide and post responses at the same website. Take responsibility to review and be familiar with all questions and responses posted to this website up through 2 business days prior to the bid opening and to make any necessary adjustments in the proposal accordingly. If the Department’s web site cannot be accessed, contact Conrad Campbell at [conrad.campbell@dot.state.fl.us](mailto:conrad.campbell@dot.state.fl.us) or 813-975-6293. When, in the sole judgment of the Department, responses to questions require plans revisions, specifications revisions and/or addenda; the Contracts Office will issue them as necessary.*

- *The conditions encountered would have been evident if the Contractor Examined the contract and the project site before bidding.*
- *No bid questions were submitted by any Contractor regarding the bridge joint or roadway geometry.*

# REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

## Article 5-12.2 Notice of Claim

### **5-12.2 Notice of Claim:**

**5-12.2.1 Claims For Extra Work:** Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, **the Contractor shall notify the Engineer in writing of the intention to make a claim for additional compensation before beginning the work on which the claim is based,** and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay.

**If such notification is not given and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension.**

- The Contractor's Intent to Claim was received on June 6, 2011. All paving was completed on May 22, 2011 well before the Intent to Claim.

## Article 330-12.4.5.2 Rolling Straightedge Exceptions

**330-12.4.5.2 Rolling Straightedge Exceptions:** Testing with the rolling straightedge will not be required in the following areas: shoulders, intersections, tapers, crossovers, parking lots and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets. In the event the Engineer identifies a surface irregularity in the above areas that is determined to be objectionable, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 330-12.5. The Engineer may waive straightedge requirements for transverse joints at the beginning and end of the project, and at the beginning and end of bridge structures, if the deficiencies are caused by factors beyond the control of the Contractor, as determined by the Engineer. In addition, the Engineer may also waive the straight-edging requirements on ramps and super-elevated sections where the geometrical orientation of the pavement results in an inaccurate measurement with the rolling straightedge.

- All requested repairs were completed on the mainline paving and therefore not considered an exception area.
- The deficiencies required repair since they were not caused by factors beyond the Contractor's control as determined by the Department.

## Article 330-4.5.5 Friction Course Layer

**330-12.4.5.5 Friction Course Layer:** Straightedge the friction course layer in accordance with 330-12.4.2, either behind the final roller of the paving train or as a separate operation upon completion of all paving



## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

operations. Notify the Engineer of the location and time of straightedge testing a minimum of 48 hours before beginning testing. The Engineer will verify the straightedge testing by observing the Quality Control straightedging operations. Address all deficiencies in excess of 3/16 inch in accordance with 330-12.5. For laser acceptance, corrections may be made either before or after laser acceptance testing.

- The Contractor completed all repairs as required by the specification and no reimbursement is warranted.

### General Discussion of Major Points in Contractor's Claim Package

#### Paving on a Vertical Curve

TPC attributes some of their difficulties in producing an acceptable ride to the geometry of the roadway, specifically vertical curves. In response, the ride after the initial placement of friction course was unacceptably rough. Vertical curves are smooth and not rough. Specification 330-12.4.5.2; which states:

**“330-12.4.5.2 Rolling Straightedge Exceptions:** Testing with the rolling straightedge will not be required in the following areas: shoulders, intersections, tapers, crossovers, parking lots and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets.

*In the event the Engineer identifies a surface irregularity in the above areas that is determined to be objectionable, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 330-12.5. The Engineer may waive straightedge requirements for transverse joints at the beginning and end of the project, and at the beginning and end of bridge structures, if the deficiencies are caused by factors beyond the control of the Contractor, as determined by the Engineer. In addition, the Engineer may also waive the straight-edging requirements on ramps and super-elevated sections where the geometrical orientation of the pavement results in an inaccurate measurement with the rolling straightedge.”*

*This specification does not exempt vertical curves from the straightedge requirements; therefore, entitlement for additional costs is not warranted.*

# REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

## Bridge Expansion Joints

TPC notes the difficulties in matching the irregular surface of bridge expansion joints.

In the original placement of the friction course there was no attempt to match the joint at all. This is documented in the April 22, 2011 e-mail from James Cato to Alene Harris (Page ??) noting that the asphalt is high at the joints and stating that the bridges would be milled and repaved. Ultimately TPC was able to produce an acceptable ride as shown in the following tables:

Bridge 100910 (South Bridge SB Roadway) Paved Bridge Deck							
L1 Deficiencies							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	<b>Initial Straightedge</b>	1 def. 3 SY		1 def. 8 SY			4 def 35 SY total
	<b>After 4/26/11 Repair Attempt</b>	2 def 11 SY total	1 def 12 SY		2 def 20 SY total	1 def 13 SY	
	<b>After 4/27/11 Repair Attempt*</b>	2 def 4 SY total (4/16"L)					
* Deficiencies left in Place at No Pay							

Near Bridge 100910 (South Bridge SB Roadway) Beyond Bridge Deck							
L1 Deficiencies							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	<b>Initial Straightedge</b>				1 def 4 SY		
	<b>After 4/26/11 Repair Attempt</b>	2 def 12 SY total		1 def 7 SY		1 def 8 SY	
	<b>After 4/27/11 Repair Attempt*</b>	1 def 8 SY (4/16" L)					
*Deficiencies left in place at No Pay							

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

Bridge 100910 (South Bridge SB Roadway) Paved Bridge Deck							
L2 Deficiencies							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	Initial (4/14/11) Straightedge	<b>BRIDGE DECK NOT STRAIGHTEDGED THIS DATE</b>					
	5/1/11 Straightedging (Includes Bridge Deck)	2 def 9 SY total	4 def 25 SY total				
	After 5/8/11 Repair Attempt	1 def 4 SY	1 def 8 SY				
	After 5/9/11 Repair Attempt	1 def 3 SY					
	5/19/2011 Straightedge *	1 def 3 SY					
*Deficiency left in place at no pay							

Near (South Bridge SB Roadway) Beyond Bridge Deck							
L2 Deficiencies							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	Initial (4/14/11) Straightedge	1 def 4 SY	1 def 13 SY				
	5/1/11 Straightedging	5 def 29 SY total	2 def 17 SY total	1 def 8 SY total			
	After 5/8/11 Repair Attempt	1 def 15 SY			1 def 12 SY		
	After 5/9/11 Repair Attempt	2def 5 SY total					
	5/19/11 Straightedge	<b>No Deficiencies</b>					

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Bridge 100101 (South Bridge NB Roadway) Concrete Deck							
Roadway South of Bridge							
R 1 - No Deficiencies							
R 2 - No Deficiencies							
Roadway North of Bridge							
R 1 - No Deficiencies							
R2 Deficiencies		<b>BEYOND BRIDGE DECK</b>					
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	Initial Straightedge	1 def 8 SY				1 def 8 SY	
	After 4/26/11 Repair Attempt		1 def 8 SY		2 def 11 SY total		
	After 4/27/11 Repair Attempt		2 def 25 SY total		1 def 12 SY		
	After 4/28/11 Repair Attempt	2 def 12 SY total					
	After 5/9/11 Repair Attempt*			1 def 13 SY			
	After 5/18/11 Repair Attempt						
	After 5/23/11 Repair Attempt**						
*5/9/11 Repair Attempt was necessitated by an unmatched Longitudinal joint Between R1+R2							
**5/23/11 Repair Attempt was necessitated by overly thick FC-5(1½" vs. ¾" plan thickness)							

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

Bridge 100011 ( Broadway Bridge SB Roadway) Paved bridge deck							
<b>L1 Deficiencies</b>							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
Entire Bridge deck repaved based on TPC/James Cato's acknowledgement that the bridge deck was paved high.							
	<b>Post Repaving</b>	1 def. 3 SY	3 def 24 SY total	1 def 5 SY			
	<b>After 5/19/11 Repair Attempt*</b>	<b>No Deficiencies</b>					
<b>L2 Deficiencies</b>							
	<b>Post Repaving 5/11/2011 Straightedge**</b>	2 def 5 SY total	3 def 21 SY total				
* Note: on 5/19/11 Repair attempted was done with FC 12.5 to correct excessively thick FC-5							
**Deficiencies accepted in place at no pay							

Near Bridge 100011 ( Broadway Bridge SB Roadway) Beyond bridge deck							
<b>L1 Deficiencies</b>							
		4/16" H	5/16" H	6/16"H	7/16"H	8/16" H	>8/16"H
	<b>Post Repaving</b>						
	<b>After 5/19/11 Repair Attempt</b>	<b>No Deficiencies</b>					
<b>L2 Deficiencies</b>							
	<b>Post Repaving 5/11/2011 Straightedge</b>	*2 def 8 SY total	*1 def 5 SY total				
*Deficiencies accepted in place at no pay							
Note: On 5/18/11 the shoulder was repaved to correct mismatched joint between outside edge of roadway and inside edge of shoulder.							

Near Bridge 100102 ( Bridge NB Roadway) Concrete Bridge Beyond Bridge Deck							
<b>No Deficiencies.</b>							

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### *Straightedge Specifications Were Misinterpreted*

*TPC claims that Section 330-12.4.5.2 of the Standard Specifications, 2010 edition (Rolling Straightedge Exceptions) should have been applied to the bridge decks, eliminating the straightedge requirement or, at worst, requiring correction of deficiencies in excess of 3/8", implying that the 3/16" requirement from section 330-12.4.5.5 was not applicable on and adjacent to the two bridges over CSX facilities.*

- Section 330-12.4.5.2 of the Standard Specifications (2010 edition) is quoted as follows: "shoulders, intersections, tapers, crossovers, parking lots and similar areas and to turn lanes, acceleration/deceleration lanes and side streets less than 250 feet in length."*
- The areas being straight-edged are full width mainline lanes. The applicable specification is 330-12.4.5.5 which requires the correction of all deficiencies in excess of 3/16".*

*Additionally, the Contractor improved on straightedge deficiencies each attempt until the ride was ultimately acceptable as can be seen by the tables on pages 6 through 9.*

*TPC questions the extra straightedging being required of them. The specification allows straightedging in additional areas other than the outside wheel path. This additional straight edging was requested in an effort to determine a "best fit" to the expansion joints. The additional straight edging was quickly abandoned and not utilized to determine areas for correction with straight edging then limited to outside wheel path only and done in accordance with FM 5-509. It should be noted that there were other workmanship issues that had to be corrected during these same attempts such as longitudinal deficiencies, (drop offs between thru lanes of friction course), in the road.*

### *Incomplete design and use of FC-5 with polymer*

*TPC claims that The Department should have replaced the epoxy joints to allow the Contractor better working conditions for their paving efforts. Additionally, they claim that The Department should have called for a friction course other than FC-5 with Polymer due to workability issues.*

*The Department's design was clear and constructable. It was determined during design that the joints did not need to be replaced. The existing joints are very apparent and not an unforeseen condition. The Contractor has a responsibility to review the Project Prior to bid and submit bid questions when additional clarification is needed.*

*It is noted in the Contractor's claim package that the FDOT did ultimately allow them to use FC12.5 on the bridge. That is correct for three panels only on the inside lane, southbound, on the north CSX overpass. The FC-5 was found to be too thick due to excessive milling of the friction course. In the interest of getting job completed and limiting impact to traveling public FC 12.5 was allowed in this area only rather than requiring TPC to remove all of the structure and place both structure and FC-5.*

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

TPC notes that the specified mix is difficult to hand work as would generally be required at joints. However, their ability to achieve an acceptable result shows that it could be done. TPC emphasizes the heroic efforts they put forth to overcome what they deem to be a questionable design, from attempts to get the Department to change its design to changing crew personnel to bringing in upper management and also additional expertise from their Jacksonville Division. The Department's design is not an issue as is evidenced by TPC's success in significantly improving the ride quality. Further, the contract requires that the contractor provide personnel competent to produce a product which complies with the contract requirements. Ultimately they did.

### SUMMARY

There were no unforeseen conditions. The vertical curves were present at the time of bid as were the expansion joints. Spacing on the expansion joints was clearly indicated in the project plans and there was no change to the pavement design (with the exception of minor changes the last two days of paving to address TPC's workmanship issue). In addition, the vertical curves had no significant impact on the straight edging as is evidenced by the absence of straightedge deficiencies in the northbound roadway and minimal deficiencies in the southbound inside lane after correction.

The Department has correctly required TPC to straightedge and correct deficiencies in accordance with Standard Specification 330-12.4.5.5 the specifications.

The major effort required to produce an acceptable product was necessitated by TPC's workmanship issues as evidenced by mismatched longitudinal joints, and mismatched transverse joints in areas not affected by bridge features. In addition, a significant portion of the corrective work was not on the bridge decks (54%).

The product initially produced was not acceptable. TPC improved the ride to the point that it was ultimately acceptable. This proves constructability and Cone & Graham's claim was therefore denied.

Please note the Department didn't receive a Notice of Intent to File Claim until June 6, 2011. The last date of paving was May 23, 2011.

Notice of Intent to Claim which is a condition precedent to entitlement any claim as stated in specification:

#### **5-12.2 Notice of Claim:**

**5-12.2.1 Claims For Extra Work:** Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall notify the Engineer in writing of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay.

## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

*Finally, and most importantly, The Department enforced the contract fairly, consistently and appropriately. Numerous complaints were received from the public regarding roughness of the ride after each attempt by the Contractor until the final attempt. The straightedge deficiencies improved significantly after each attempt.*

*We request that the Regional Dispute Review board find that the Contractor and its Subcontractor are “Not Entitled” to additional compensation for repairing Straightedge deficiencies on the subject project.*

### **CONTRACTOR’S REBUTTAL<sup>2</sup>:**

*TPC has reviewed the Departments position on the subject issue. Upon our review we disagree with a few key points in the Department’s position and conclusions.*

*On page 2 of their position the Department states “None of the issues raise in their claim is an unforeseen condition(s).” The Department then explains that the epoxy header curbs and the vertical curve were known conditions at the time of bid. TPC agrees with the Department’s statement. We knew of these conditions, and especially the rutted uneven condition of the epoxy header joints.*

- 1. What was not known at the time of bid was that the Department would not consider the condition of these epoxy joints “factors beyond the control of the Contractor” and “waive straightedge requirements for transverse joints at the ...beginning and end of bridge structures” as allowed by specification 330-12.4.5.2. The epoxy joints exist at not only the beginning and end of each bridge, but also at every joint on the deck of the bridge. As these are expansion joints, and subject to movement, we feel that each span is a separate bridge structure. Therefore we did not feel that any question needed to be asked at bid time.*
- 2. With respect to the vertical curves we felt that the Department would recognize that the vertical curve is a “geometrical orientation of the pavement”, which, “results in an inaccurate measurement with the rolling straightedge.”, as stated in 330-12.4.5.2. As we have explained and illustrated in our position papers, the vertical curve will add 1/16”, and possibly as much as 2/16” HIGH to a reading on the RSE. Therefore a true HIGH spot in the pavement surface which is 3/16” HIGH (at the limit of the allowed tolerance) would result in a reading on the RSE of between 4/16” and 5/16”. By not considering the effect of the “geometrical orientation of the pavement”, the Department actually held TPC to an allowable tolerance of between 1/16” and 2/16” (3/16” – the effect of the vertical curve).*

*On page 4 of the Department’s position, it is stated that “All requested repairs were completed on the mainline paving and therefore not considered an exception area.” The sentence in 330-12.4.5.2 “The Engineer may waive the straightedge requirements for transverse joints at the beginning and end of the project, and at the beginning and end of bridge structures, if the deficiencies are caused by factors beyond the control of the contractor, as determined by the Engineer”, does not specify any other specific area or condition. Therefore the fact that the deficiencies on or within 15’ of the bridges are on the mainline, DOES NOT exclude them from*

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<sup>2</sup> For Appendix “A” and “B” see original Rebuttal Paper



## REGIONAL DISPUTE REVIEW BOARD RECOMMENDATION

*being considered as exceptions. Similarly, as described in our position papers and in #1 above, the condition of the epoxy header curbs was indeed a factor “beyond the control of the Contractor”. TPC has acknowledged that some deficiencies were the result of other factors which were within our control, and therefore took responsibility for the cost of some of the repairs as detailed in our claim package previously submitted to the Department. We only seek entitlement to some of the repair costs incurred.*

*Under Article 330-4.5.5 Friction Course Layer on the bottom of page 4 of the Department’s position it is stated, “The Contractor completed all repairs as required by the specification and no reimbursement is warranted.” As is clearly apparent in the spreadsheet in Tab E in our position papers, and in the tables on pages 6-9 of the Department’s position, the final pavement was accepted even though there still were areas which did not meet the specifications (4/16” – 5/16” HIGH). Some of the areas were only 4/16” to 5/16” HIGH before any repairs were attempted and were rejected and then after several repair attempts were accepted with deficiencies of the same magnitude. At that point in time (at the end of paving repairs and the end of the project), it became evident that many of the repairs should not even have been required if some 4/16” and 5/16” deficiencies were going to be accepted. As a result, and at that point in time when the pavement was accepted, TPC deemed “that additional compensation ... is due for work or materials ... or which is by written directive expressly ordered by the Engineer ... the Contractor shall notify the Engineer in writing of the intention to make a claim...”. All work was completed at that point. TPC notified the Engineer of our intent to file claim when it was deemed that we were due additional compensation. In our opinion we did provide proper notice in accordance with Article 5-12.2.1. During the repairs, representatives of TPC did make verbal comments to the Project Engineer that TPC might be looking for compensation for some of the repairs.*

*On page 5 of their position, the Department states that “the ride after the initial placement of friction course was unacceptably rough. Vertical curves are smooth and not rough.” A rough ride is very subjective and subject to opinion. Acceptance is not based upon “ride”, but on the results of the RSE. A roadway surface which contains 3/16” HIGH spots, followed by 3/16” LOW spots, then repeating this sequence will surely give a “ride” that could be considered “rough” yet the pavement would meet specifications when tested with the RSE. Again as stated above, TPC is not looking for the vertical curve sections to be exempt from the specification, only that the affect of the curve on the RSE results be considered.*

*It is important to remember that the design vertical curve is along the centerline of the roadway. We have illustrated that if the roadway was built exactly to the design vertical curve that the affect of the curve on the RSE is a little less than 1/16” (actually 80% of 1/16” which is 1/80” less than 1/16”). This is far less than the accuracy of the RSE. Vibration as the RSE is pulled across FC-5 is in excess of this 1/80”). Therefore for all practical purposes the effect of the vertical curve can be assumed to be 1/16” if the existing roadway was constructed perfectly to the design. During construction of any roadway or structure there are allowable construction tolerances. Any deviation at any point within the vertical curve from the design curve will alter the magnitude of the affect on the RSE. For example if a 15’ section of the roadway is built “flatter” with no curve in it, then another section along the length of the roadway will need to have more curvature to make up*

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*for what has been lost in the flatter area. More curvature will cause a greater error in the RSE. No detailed as-built data on the existing roadway was included in the contract documents, so we have no way to determine how close the existing roadway was actually built to the design curve.*

*On page 5 under Bridge Expansion joints, the Department refers to an April 22, 2011 email from James Cato. TPC acknowledged in our claim to the Department that we were responsible for SOME of the repairs. We only seek entitlement to those repairs which we feel were not necessary based upon the final acceptance criteria.*

*On page 11 of their position, the Department bullets out two reasons why the bridge decks are not exemptions. TPC agrees that the bridge decks do not fall under the first bullet point, but as explained previously they do qualify under the transverse joints at the beginning and end of a structure. The second bullet states that the areas being straightedged are full width lanes and then references 330-12.4.5.5. The specification needs to be considered in its entirety. 330-12.4.5.1 states “Test all pavement lanes and ramps where the width is constant and document all deficiencies in excess of 3/16 inch on a form approved by the Engineer.” The key word in the sentence is “document”. It does not say “repair” or “correct.” The next section 330-12.4.5.2 Rolling Straightedge Exceptions must also be considered. As expressed above TPC is of the opinion that the bridge decks meet the requirements for an exception. The next applicable section is 330-12.4.5.5 which states “Address all deficiencies in excess of 3/16 inch in accordance with 330-12.5.” The key word here is “address”. It does not say “correct” as the Department interprets it. In support of our interpretation 330-12.5.1 again uses the word “address”. It also says “Retest all corrected areas ...”. But can there be areas which have been “documented” and “addressed” but which are not repaired? Section 330-12.5.1.2 answers that question - “As an exception, the Engineer may allow the contractor to leave these areas in place if it is determined by the Engineer that the deficiency is not a significant detriment to the pavement quality.” If the final product was accepted with deficiencies of 4/16” and 5/16” remaining, why was the original pavement with these same deficiencies not accepted?*

*On page 11 under “Incomplete design and use of FC-5 with polymer”, the use of an alternate friction course is discussed. After our first attempt to match the epoxy header curbs on the bridge, TPC asked the Department to consider the use of a fine graded friction course such as FC-12.5, which is easier to do handwork with, and gives us more working time to try to use handwork to tie the surface into the bridge joints and minimize deficiencies. The Department turned down our request and said they would only accept FC-5. After numerous repairs the Department did direct TPC to use FC-12.5 on 3 panels on the north CSX overpass. The Department claims that this was due to the FC-5 being too thick due to excessive milling of friction course. On each of the repair attempts, TPC milled off the 5/8” layer of FC-5. But we were directed to mill to the satisfaction of the Verification Inspector. When 5/8” milling still left a bit of the friction course, we were directed to mill deeper which removed some of the structural course. Because we were directed to mill deeper by the Department’s representative and now the FC-5 would need to be placed too thick in order to match the joints, we were directed to use FC-12.5 as an alternative to milling additional structural asphalt and then replacing with a new structural layer and then FC-5.*

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*When it was beneficial to correct a problem, expedite the repair and reduce the impact to the public, the Department elected to allow FC-12.5, but when we had previously requested to use it to benefit the final product we were denied. Use of FC-12.5 on the bridge decks with the tie-ins to the epoxy header curbs may have eliminated some of the repair attempts that were ultimately required.*

*The Department contends that when TPC brought in more expertise during repairs that acceptable results were finally achieved. A review of the final results which were accepted as discussed above shows that even with our best expertise deficiencies still remained. The Project Administrator still was not satisfied with the corrections and despite her disagreement, the remaining deficiencies were waived by Brian Pickard.*

*The Department in their position papers included a number of tables on pages 6-10. We have reviewed these tables and compared them to the RSE reports and the RSE result spreadsheet in Tab E of our position papers. We disagree with the data in the Departments tables. Appendix A of this rebuttal includes copies of these tables. Each table has been corrected in red with the number of deficiencies we feel are accurate based upon the reports. Comments below each table summarize the improvement (if any) from multiple repairs, as well as inconsistencies in the acceptance criteria.*

*The Department has maintained that they have been fair and consistent in their application of the specification requirements to this project. Appendix B of this rebuttal contains a summary of the repair efforts in each lane. These summaries present the data submitted in Tab E of our position papers as well as information submitted in our position under Presentation of Facts. The yellow highlighted sections indicate how we feel the Department's decisions and use of the specifications were not consistently applied.*

### SUMMARY

*As acknowledged above, TPC was aware of the conditions and challenges this project presented. We also understand the specifications and how they are typically interpreted, therefore we approached this project without any question that we would be expected to do our best to meet the existing bridge joints and would be expected to correct any deficiency over 3/8". The original Verification Inspector on the project (as stated in our position papers) specifically stated that the bridge decks were exempt from even being tested with the RSE. This agreed with our interpretation of the specifications. Because the project had a "rough ride", the Department later directed us to test the bridge decks with the RSE and remove and replace any deficiency in excess of 3/16". Understanding that the bridge decks are within the vertical curves and that 1/16" – 2/16" error in the RSE reading results from it, means that TPC was actually being held to a tolerance of 1/16" – 2/16". It took numerous repair attempts to try and meet this tolerance with limited success. Finally the project was accepted with what we consider minimal improvement (based upon RSE test results) and it still contained deficiencies for which we were penalized. The Department claims in their Summary that the "absence of straightedge deficiencies in the northbound roadway and minimal deficiencies in the southbound inside lane after correction", is evidence that the vertical curve had no impact on the straightedging. This is NOT proof that there was NO affect. It only means that any deficiency that existed was small enough that when the affect*

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*of the vertical curve was added to it, the result was 3/16" or less. A review of the post construction video submitted with our position clearly shows that almost the entire length of the lanes tested and videoed showed between 1/16" and 3/16" HIGH.*

*Additionally the final repair work in R-2 which required removal and replacement of the existing structural layer, that the Department agreed to pay for, has never been paid.*

*We ask the Dispute Review Board to review our positions and consider the following:*

- *The vertical curves did contribute an error to the RSE results, thereby requiring TPC to meet a tolerance less than the specification allowance of 3/16".*
- *The epoxy header curbs were uneven and rutted. This was a factor beyond the contractor's control. Trying to match these joints and still meet a 3/16" (actually less due to the vertical curve) was an unrealistic expectation.*
- *The construction of the bridges with expansion joints at every pier, and the use of an epoxy header curb on each side of the expansion joints isolated the asphalt pavement to 33' – 50' panels on the bridges. Each span is movable and can deflect and expand and contract independently from the adjacent spans. Thus each bridge is a composite of several bridge structures. Each expansion joint is the end of one bridge structure and the start of the next bridge structure. Also considering that the expansion joints were a factor beyond our control, our expectation that the bridge decks would be exempt from testing with the RSE and the 3/16" tolerance is a reasonable expectation.*
- *At what point in time during the repairs did it become evident that the repeated repairs were above and beyond the responsibility of TPC? We contend that this occurred when final acceptance occurred with deficiencies remaining. At that point before performing any additional work Notice of Intent needed to be given in accordance with 5-12.2.1. All work was complete at that time. Therefore we feel that the Department's contention that no entitlement is due as a result of failure to give notice is not a valid argument and is unfair.*

*Upon careful consideration of the above, we request that the Dispute Review Board find that TPC is entitled to compensation for some of the repairs performed.*

### **DEPARTMENT'S REBUTTAL:**

#### **REBUTTAL TO CONE AND GRAHAM'S POSITION PAPER**

**FN 41684225201**

##### ***A. Pavement Smoothness – Correction Criteria vs Acceptance Criteria***

*After the completion of the friction course placement and prior to the commencement of corrective work, the rideability was notably poor and drew phone calls from a variety of users of the roadway.*

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*The roadway was straightedged and the contractor was required to correct deficiencies in excess of 3/16" as is required for mainline roadway.*

*After numerous attempts to meet the pavement smoothness requirement, the Department did indeed allow some deficiencies to remain in at no pay as TPC states in their position paper. The decision to allow some deficiencies to remain in place at no pay was based on a significant improvement in rideability and is allowed by specification. The tables in the Department's position paper pp 6-10 document the progressive improvement in pavement smoothness with the number of deficiencies and the magnitude decreasing as TPC persisted in their corrective efforts. Ultimately, the effect of the remaining deficiencies had been diminished to the point that the rideability was deemed acceptable.*

### **330-12.5 Unacceptable Pavement:**

#### **330-12.5.1 Corrections:**

**330-12.5.1.2 Friction Course:** Correct deficiencies in the friction course layer by removing and replacing the full depth of the layer, extending a minimum of 50 feet on both sides (where possible) of the defective area for the full width of the paving lane. As an exception, the Engineer may allow the contractor to leave these areas in place at if it is determined by the Engineer that the deficiency is not a significant detriment to the pavement quality. A reduction to the pay quantity item will be made in accordance with 330-12.5.2.

#### ***B. The Effect of a Vertical Curve***

*The contractor has suggested that the vertical curvature of the roadway had a significant impact on the smoothness testing. Our theoretical calculations for the very worst curve out of four curves on the project show a maximum contribution of .04816", or, 0.75/16", Since this is less than 1/16" (0.0625") the contribution is negligible. The smoothness criteria is 3/16" or 0.1875". Deviations less than 4/16" were not noted as deficiencies. Hypothetically, if a correction factor based on the contractor's calculation was introduced, even the 4/16" deficiencies would exceed the smoothness requirement of 3/16".*

#### ***C. Notice of Intent To Claim***

*As stated in our Position Paper, A timely Notice of Intent is a requirement for any claim to be compensated for additional work. Specification 5-12.2.2.1 is quoted as:*

*"If such notification is not given and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension."*

*The Contractor's intent to Claim was received on June 6, 2011. All paving was completed on May 22, 2011 well before the Intent to Claim.*

### **SUMMARY**

*The initial rideability of the friction course was unacceptable. Deficiencies were identified during straightedging. The vertical curvature of the roadway did contribute to the deviation measured by the straightedging, but not significantly (less than 1/16"). Corrections were required in accordance with the*

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applicable specifications. Ultimately, the rideability was improved to the point that the friction course could be accepted by the Department. A timely Notice of Intent to Claim was not provided.

### **BOARD FINDINGS/EXPLANATION:**

Section 5-12 Claims by Contractor of the 2010 Standard Specifications for Road and Bridge Construction states in part:

#### ***5-12 Claims by Contractor.***

***5-12.1 General:*** *When the Contractor deems that extra compensation or a time extension is due beyond that agreed to by the Engineer, whether due to delay, additional work, altered work, differing site conditions, breach of Contract, or for any other cause, the Contractor shall follow the procedures set forth herein for preservation, presentation and resolution of the claim.*

*Submission of timely notice of intent to file a claim, preliminary time extension request, time extension request, and the certified written claim, together with full and complete claim documentation, are each a condition precedent to the Contractor bringing any circuit court, arbitration, or other formal claims resolution proceeding against the Department for the items and for the sums or time set forth in the Contractor's certified written claim. The failure to provide such notice of intent, preliminary time extension request, time extension request, certified written claim and full and complete claim documentation within the time required shall constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to additional compensation or a time extension for such claim.*

#### ***5-12.2 Notice of Claim:***

***5-12.2.1 Claims For Extra Work:*** *Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall notify the Engineer in writing of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. If such notification is not given and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension. Such notice by the Contractor, and the fact that the Engineer has kept account of the labor, materials and equipment, and time, shall not in any way be construed as establishing the validity of the claim or method for computing any compensation or time extension for such claim. On projects with an original Contract amount of \$3,000,000 or less within 90 calendar*

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*days after final acceptance of the project in accordance with 5-11, and on projects with an original Contract amount greater than \$3,000,000 within 180 calendar days after final acceptance of the project in accordance with 5-11, the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9. However, for any claim or part of a claim that pertains solely to final estimate quantities disputes the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9, as to such final estimate claim dispute issues, within 90 or 180 calendar days, respectively, of the Contractor's receipt of the Department's final estimate. If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.*

The Board finds:

That the Contractor/Subcontractor failed to provide timely notice in accordance with the specifications.

By the failure to provide timely notice, the Contractor/Subcontractor waives the claim for additional compensation.

It is sometimes argued that a DRB will provide a recommendation that ignores the contract or is somewhere in between the positions taken by each party; in effect, a compromise. **It is not the DRB's prerogative to substitute its own ideas of fairness and equity for the provisions of the contract. ...**<sup>3</sup>

### **BOARD RECOMMENDATION:**

**Therefore, based on the materials supplied to the Board and presentations to the Board at the RDRB hearing, the Board recommends no entitlement to compensation for the repairs to fix the multiple asphalt tie-ins to the irregular epoxy header joints over 2 bridges and the 3 locations on vertical curves.**

This Board sincerely appreciates the cooperation of all parties and the information presented for its review in making this recommendation.

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<sup>3</sup> DRBF Practices and Procedures Section 1 – Chapter 6

## REGIONAL DISPUTE REVIEW BOARD 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 an acceptance of this recommendation by the non-responding party.

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

Respectfully Submitted  
Disputes Review Board

John H. Duke Sr.; DRB Chairman  
David M. Jameson; DRB Member  
William E. Waddell; DRB Member

SIGNED FOR AND WITH THE CONCURRENCE OF ALL MEMBERS:

A handwritten signature in black ink, appearing to read "JH Duke", with a stylized flourish at the end.

John H. Duke, Sr.  
RDRB Chairman