December 03, 2003

Mr. Steve W. Smith
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Smith & Company, Inc.
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Mr. Mark DeLorenzo, PE
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RE: SR-50 from CR 485/SR-50A to SR 700 (US-98) and SR-45 (US-41) from VFW Road to Benton Avenue. F.P.ID 254805-1-52-01, 254805-1-56-01, 254816-1-56-01, 254816-1-56-02, & 254816-1-52-01.
SPN: 08002-3501 & 08010-3526.
Contract No: 20358
District 7

DISPUTE: Request for Time and Compensation Adjustment – US-41 Pavement Repairs.

Dear Sirs:

The Contractor, Smith & Company, Inc. (SCI), requested a hearing to determine **entitlement** of SCI to additional time and money on the referenced project. Should entitlement be established, the Disputes Review Board (DRB) was not to decide quantum of such entitlement at this time, as the parties, the Florida Department of Transportation (FDOT) and SCI would attempt to negotiate the value of the entitlement.

Pertinent issues, correspondence and other information relating to SCI's, and FDOT,s positions were forwarded to the DRB for review and discussion at the hearing that was held November 21, 2003.

ISSUE:

The Contractor claims that he encountered additional and unforeseen work associated with pavement failures on US 41. This additional and unforeseen work included, but was not limited to, SCI removing work previously completed and accepted by the FDOT, replacing the material with extra depth limerock and installing new asphalt.

CONTRACTOR'S POSITION:

Request for Equitable Adjustment
US 41 Pavement Failures

The purpose of this submittal is to request the Florida Department of Transportation ("FDOT") to issue a supplemental agreement in accordance with 4-3.2.1 to Smith & Company, Inc. ("SCI") for the additional and unforeseen work associated with pavement failures on US 41. This additional and unforeseen work included, but not limited to, SCI removing work previously completed and accepted by the FDOT, replacing the material with extra depth limerock and installing new asphalt. The removal and replacement work was neither original anticipated nor the fault of SCI. SCI has been impacted by, but not limited to, extended performance of the project, the removal and disposal of the material that failed, obtaining new and additional material, the placement of new lime rock material, and the new asphalt pavement of the roadway.

For settlement purposes only, this submittal does not include all of the time nor the associated costs. SCI herein reserves it right to include such items if we are not able reach an agreeable settlement. SCI has utilized the same methodology AIM utilized in determining time on the previous milling issue.

The issue of the pavement failure and replacement is summarized as follows:

- *SCI installs roadway and asphalt pavement in accordance with contract documents.*
- *FDOT engineer, AIM, inspects and approves the work.*
- *FDOT pays SCI for work performed and approved.*
- *FDOT certifies that the work has been completed.*
- *The Roadway Fails on or about July 3, 2002.*
- *SCI work in this area is "stopped / suspended" pending design directive change.*
- *AIM issues a change order request on August 1, 2002 for a price to install an underdrain system to correct the defective design.*
- *On August 14, 2002 AIM rescinds change order requests for underdrain and blames SCI sequence and manner of construction as the root cause of the pavement and base failure.*
- *Under protest, SCI removes failed items and replaces them with additional and new material.*

As you are aware, we have retained Arnold Ramos & Associates, LC to perform an independent analysis of this pavement failure, and their report indicated the following:

Pavement Failure Station 308+05 & 309+42 inside.left roadway.

"Properties on the east side of the US 41 R/W were higher than the existing roadway. As a result the ground waters from these areas would flow toward the roadway and into the area between the base and A-7 material...

"Test holes by project personnel ... showed ground water present."

In summary, Mr. Ramos expert opinion was "that this area should have had an underdrain system installed when the existing roadside ditches were eliminated. ... An underdrain system, if installed along the east side and connected to the roadway drainage system could provide the best insurance to prevent future failures."

As you are aware, AIM's letter no. 1117 dated August 1, 2002 stated in part the following:

> *"The grassed median area on US 41 from station 300+91.65 to Station 311+31.10 continues to hold excessive amounts of water and needs to be corrected prior to completion of the project. A type II underdrain per standard index (286) needs to be installed to handle excessive water in the median. The underdrain can be placed behind the left side median curb or directly in the median to handle the water towards drainage structure S-129 cross drain.*
>
> *Please furnish our office with quotes for the above work so that a work order can be generated to complete this work prior to the final acceptance date."*

Both our experts, AIM and Arnold Ramos, indicated that the root cause of the failure is the excessive water.

SCI performed the additional and unforeseen work, and herein submits its actual direct cost for Labor, Equipment, Subcontractors and Suppliers as follows:

Description	Amount
Labor & Equipment Subtotal	$ 62,095.61
Subcontractor & Material	$ 91,147.09
Time @ $4,500.00 / day x 89	$ 400,500.00
Subtotal	$553,742.70
General Liability & Bond @ 1.5%	$8,306.14
Total	$562,048.84

In support of SCI request, please find attached the following:

- *Summary of Labor, Equipment, Subcontractors & Material Only*
- *SCI Weekly Time Sheet Recaps w/ Time Sheets*
- *Subcontractor & Material Cost*
- *Schedule Impact & Time Analysis*

In summary, SCI installed the original roadway and asphalt in accordance with the contract document that the FDOT issued for construction, and AIM inspected and approved the work accordingly. The failure occurred, and AIM determined that it was the result of excessive water, which was confirmed by Arnold Ramos. Under protest, SCI performed the additional and unforeseen work and herein request a supplemental agreement in the amount of $562,048.84 dollars and 89 day time extension.

DEPARTMENT'S POSITION:

Issue:

Smith & Company Inc. is seeking compensation for repair work for roadway failures that occurred on US41 south of SR50 due to excessive moisture in the limerock base. In addition Smith & Company, Inc. is seeking contract time during the repair operations.

Back Ground of Issue:

Super Pave asphalt concrete was replaced on US41 due to failing test results per specifications and some asphalt was replaced at the request of the Department. Upon completion of the repaving operations and opening to traffic, the roadway began to fail. The replaced asphalt occurred in the southbound lanes (Section 2) from SR50 south to the begin project and the failures occurred within these limits in all three lanes. The failures occurred due to excessive moisture in the limerock base. The three contributing factors to the excessive moisture are trapped water in the median, the roadway from inside curb to outside curb was constructed without proper cross slope and the contractor not using the temporary drains per the standard index during construction.

Prior to replacing the asphalt mentioned above, some failures had occurred in L-1 (exhibit 1) adjacent to the median curb. These failures occurred when traffic was temporarily placed in L-1. The failures occurred in the areas of trapped water in the median. In the Department's attempt to remedy the situation, a cost for an under drain system was requested (ref 3-1). Also the removal and replacement of the previously placed acceptable limestone-based old design Superpave asphalt with a granite-based new design mix Superpave asphalt was also requested (ref 4-2). After the replacement of the asphalt and failures occurred, the root cause of the failures was determined to be the trapped water caused by the contractor's construction methods and thus the request for an under drain system was rescinded. (ref 4-3).

Exhibit 1 – Failure of old mix design asphalt.

The entire area of pavement replaced was from just south of SR50 in the three southbound lanes of US4l. The failures predominantly occurred from Horse Lake road south to Wiscon Road. (ref section 2). The asphalt south of Wiscon Road heading south to the begin project was also replaced. This area was shy in thickness and needed to be replaced at the contractor's expense. The photo in exhibit 2 shows cores that were obtained in the asphalt prior to replacement. The Department chose to fully participate in the replacement of the asphalt in this area to replace the limestone-based old mix design Superpave asphalt with a new design mix granite-based asphalt. Failures occurred at two locations south of Wiscon Road after the replacement. One of the areas was adjacent to the curb and the other area had previously been shy in thickness and flat (ref section 2). During the replacement of the outside lane (L-3) south of Wiscon Road, some rain occurred on the exposed base and this area did not fail. The moisture readings obtained met specifications in this area. This once again shows that the root cause of the failures was the trapped water in the median and water sitting on areas without proper cross slope.

Exhibit 2 (Original cores will be presented at hearing.)

Statement of Department's Position:

The Department has determined that the main cause of the failures was trapped water in the median due to Smith & Company Inc.'s sequence of operations and construction methods that delayed the completion of the grassed medians in the failed areas. Smith and Company did not fill in the medians in a timely manner and caused water to be trapped between the type `E' curb and eventually seep into the limerock base (exhibit 3) and caused the roadway failures under traffic. Contributing to these failures and causing water to remain within the curb line is the lack of cross slope of the initially constructed roadway. This is shown by the grades as determined by the survey shown in section 6-17 and 6-18. The survey shows the elevation differences between the inside type `E' curb and the outside type `D' curb. Another contributing factor is Smith & Company's refusal to use the temporary drains on the curb inlets during construction to provide drainage prior to placing the last layer of asphalt.

Exhibit 3 – Water seeping under curb from median

The trapped water in the median occurred predominantly after the construction of the type `E' curb on the northbound roadway which created a closed median area. The backfilling and grassing of the median area was not completed in a timely manner after both sides of the median curb were complete. To maintain driveways from the southbound travel lanes across the median to the businesses adjacent to the northbound lanes required the contractor to bridge the type E curb (ref 5-1). The areas between driveways were not filled and created pooled water areas. These areas eventually seeped under the curb and into the base causing the limerock to become saturated and caused the roadway failures.

The incorrect grades for the permanent curb in the failed roadway areas caused water to be retained for a greater period of time on the failed asphalt. The outside type `D' curb was constructed above the required elevations and the inside type `E' curb was constructed to the proper grade. This created a situation with very little grade difference between the curbs and thus an almost flat roadway which retained water for an extended period of time. In order to remedy the situation, the inside type `E' curb was raised to create a grade difference and cross slope to allow the water to leave the roadway and enter the gutter efficiently. This was accomplished after the roadway failures occurred. (ref 6-1 and 6-14).

The refusal of the contractor to use the temporary drains for the curb inlets along with the incorrect cross slope was another contributing factor to the failures. During the construction of the base and structural course, the temporary drains were not used and this allowed water to stand along the edge of the gutter (ref 5-4). Some of the failures occurred in L-3 which is the outside southbound lane where the water remained standing because of the non use of the temporary drains. The L-3 lane also had failed density testing and permeability and was in need of replacement. Previous to the replacement, this lane had numerous failures which had been patched (see photo exhibit 4). After the replacement of this asphalt, the failures occurred in the same locations as the previous failures.

Exhibit 4 – Patched old design mix due to previous failure.

Smith & Company, Inc. hired a consultant, Arnold Ramos & Associates, to provide an evaluation (section 7) of the roadway failures dated November 8, 2002. Statements included in this report indicate that this was not an independent evaluation. Part II on page 2 of this report states "A site visit on October 11, 2002 with Keith Driggers, who had previously been the project manager on this construction project, was helpful in the formation of my opinions." Further this report indicates that the elevations of the adjacent properties right of the right roadway (east side) were higher than the existing roadway and the ground water would flow under the base and during the compaction of the pavement would be brought up into the base and could cause failures. For this to happen, the water would have to travel under the entire northbound roadway at an upward slope and remain under the southbound roadway, where the failures occurred, and be drawn up into the base with the vibratory rollers for the asphalt. If this was the cause of the failures then northbound roadway would have failed also. As stated in the report, the analysis is not based on any geotechnical data and the opinions are based on information provided by SCI associates. This analysis is not an independent analysis as indicated in Smith & Company's submittal package.

Also included in Smith & Company's submittal is a request for and 89 day time extension and compensable costs associated. The analysis consists of a 43 day time period and 46 day time period. The begin date for the 43 days is from a letter written July 3, 2002 (ref 4-1) in which AIM was informing SCI that some pavement failure have occurred adjacent to the inside curb in L-1 due to excessive moisture and it is their responsibility to correct prior to friction course. These failures were actual failures in the old design mix prior to the asphalt being replaced (exhibit 5). These failures occurred when traffic was temporarily placed on the inside for maintenance of traffic. The new asphalt placement began on July 30, 2002 and was completed on August 5, 2002. The failures began on August 6, 2002. The ending date for the 43 day time period used was August 14, 2002. This was the date of a letter (ref 4-3) once again informing Smith & Company that the failures are their responsibility to correct. There is no logic behind the calculation of the 43 days, and no indication on how this affected the critical path of the working schedule. The 46 days are the days that SCI shows working on the repair of the failed roadway. Once again, there is no indication on how the critical path was affected. The placement of the repaired structural course asphalt was completed on October 31, 2002. The remaining asphalt placed was to correct the cross slope due to the raised median curb and the curb reveal in L-3 caused by milling too deep. There were a total of 28 actual work days for the repair per the FDOT daily reports of construction. During the period from failure beginning on August 6, 2002 until completion of repair on October 31, 2002, the contractor was working on other activities. The activities included placing structural course, turnouts, driveways, signal work, friction course, striping and punch list items.

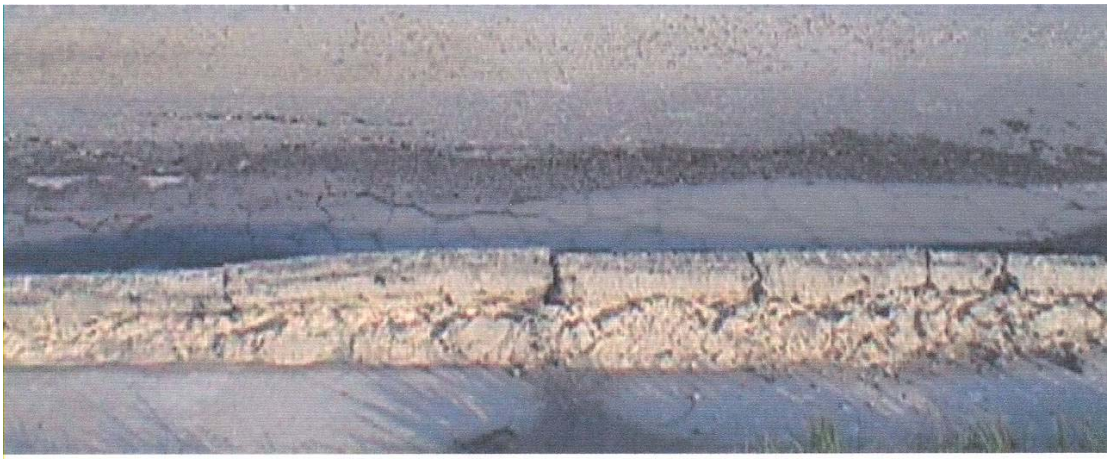

Exhibit 5 – Failed old design mix roadway

Conclusion:

The documents presented clearly show that Smith & Company Inc.'s means and methods of construction caused the pavement failures and they are not entitled to compensation for the repairs and are not entitled to additional contract time during the period of the repairs and their inactivity period.

BOARD FINDING'S:

- Much of Smith & Company, Inc. position papers addressed quantum ($) which this Board is not authorized to consider.
- Neither party submitted adequate geo-technical information to establish the real cause of the pavement failures.
- It should be noted that subsequent to the replacement of the failed base and asphalt there have been no additional failures of the base and asphalt despite the area experiencing above average rainfall in 2003.
- Paragraph 7-15 of 1991 General Specifications reads:

  Opening Sections of Highway to Traffic

  "Whenever any bridge or section of roadway is in acceptable condition for travel, the Engineer may direct that it be opened to traffic, and such opening shall not be held to be in any way an acceptance of the bridge or roadway, or any part thereof, or as a waiver of any of the provisions of the contract. Necessary repairs and renewals, made on any section of the roadway or bridge thus opened to traffic under instructions from the Engineer, due to defective material or work, or to any cause other than ordinary wear and tear, pending completion and acceptance of the roadway or bridge, or other work, shall be done by the contractor, without additional compensation."

- The absence of temporary drains at the curb inlets allowed water to stand in front of each inlet. These temporary drains were required as shown on Index 201, Sheet 2 of 6, in the Roadway and Traffic Design Standards, January 1994 edition. This index requires these drains be installed without exception.
- Technical data was not presented at the hearing to establish that standing water in front of the inlets contributed to the failure.
- The Engineer's letter No. 1090 written July 2, 2002 stated in part: "*It appears that the areas failed due to excessive rain water trapped between the limerock base and the 12.5 superpavement.*"
- The Engineer by letter (No. 1117) of August 1, 2002 specified a detailed quantity of Type II Underdrain with invert elevations, from station 300+91.65 to station 302+26 **to control excessive water in the left roadway median**. The Contractor was requested to provide a quotation for this work.
- The Engineer by letter (No. 1125) of August 14, 2002 instructed the Contractor to disregard the request for quotation in their August 1, 2002 letter. Also, the Engineer stated after they had completed their evaluation of the failures, the Contractor's construction sequence caused the water intrusion.
- Index 201 **Supplementary Details for Manholes and Inlets,** Temporary Drains for Subgrade and Base, in the Roadway and Traffic Design Standards, January 1994 states: "*Bevel cut upper stub to match forming for apron face. Capping or plugging of Upper Stub not required (friable base material of stub opening shall be removed to permit covering of opening with structural course material.")* This note conflicts with the SCI letter of August 29, 2002 which states in the fourth paragraph: "*As to the temporary drains, the lower stub would have to be capped prior to limerock and the upper capped prior to asphalt, therefore, rendering them moot.*"
- Section 8-7.3.2 of the General Specifications ***"Contract Time Extensions"*** states in part: "*The Department may grant an extension of contract time when a controlling item of*

work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. Such extensions of time may be allowed only for delays occurring during the contract time period or authorized extensions of the contract time period. When failure by the Department to fulfill an obligation under the contract results in delays in the controlling construction operations, such delays will be considered as a basis for granting credit to the contract time. Extensions of contract time will not be granted for delays due to the fault or negligence of the Contractor."

- The Position Papers presented did not establish that the Pavement Failures or subsequent Repairs were on the Critical Path Schedule or the repairs impacted critical items.
- The Special Provisions for this contract on page 40 states in part: "***CONTRACT TIME EXTENSIONS – WEATHER***" *sub-article 8-7.3.2:* "*No additional compensation will be made to the Contractor for delays caused by the effects of inclement weather.*"

BOARD RECOMMENDATION:

Based on materials supplied to the Board and presentations to the Board at the DRB hearing the Board finds that neither party has provided definitive causation of the pavement failures. Therefore, given that there are conflicting opinions as to the root cause of the failure as expressed in the Engineer's letters 1117, dated August 1, 2002 and 1125, dated August 14, 2002 as well as testimony by the Contractor's expert, the Board recommends that the parties share the cost of removing and repairing the pavement failures. The Board further recommends that the Contractor not be assessed liquidated damages for impacts to the completion of the project as may be properly documented.

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

Please remember that a response to the DRB 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.

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

Respectfully Submitted
Disputes Review Board
E.K. Richardson, Chairman
John H. Duke, Sr., Member
Lester C. Furney, Jr., Member

SIGNED FOR AND WITH THE CONCURRENCE OF ALL MEMBERS
:

E. K. Richardson

E.K. Richardson
Chairman
cc: Joy Christiano, Jim Hubbard, Cliff Cooper, Frank E. Proch, Kent Selzer, John Duke, Lester furney