

## DISPUTE REVIEW BOARD RECOMMENDATION

December 3, 2008

Mr. Boone Herberman  
DAB Constructors, Inc.  
PO Box 1589  
Inglis, FL 34449

Mr. Ed Koroshetz, P.E.  
Senior Project Engineer  
URS Construction Services  
10119 SE Hwy 441  
Bellevue, FL 34420

RE: CR 484 Realignment 241602-1-52-01

Subject: Hearing Dated Nov. 24, 2008  
Disputes Review Board Recommendation

Issue: Embankment Variability Factor

Dear Sirs,

DAB Constructors, Inc. (DAB) and the Florida Department of Transportation (FDOT) requested a Dispute Review Board hearing of a disputed issue. The hearing was held on Nov. 24, 2008 at the FDOT Ocala Operations Center in Ocala, FL. The parties furnished the Board position papers and rebuttal responses for review prior to the hearing. The Disputes Review Board was requested only to consider the question of entitlement. In accordance with your request the following recommendation is offered.

### **Issue: Entitlement to Additional Compensation Resulting from the Deletion of Variability Factor Embankment Quantity**

#### Background

The project scope involved construction of a new alignment of a portion of CR 484, including drainage improvements with retention ponds. Additionally, the work included an overpass bridge at an intersecting railroad right of way. The work in dispute involves a change to Embankment Quantity, a Plan Quantity Pay Item. The applicable specification is the FDOT 2004 Standard Specification for Roads and Bridge Construction.

The Summary of Earthwork Quantities provided in the plans included a line item under Embankment labeled “*Embankment for Variability Factor*” with a value of 4,360 CY. The total Embankment quantity was listed on the plan sheet as 914,612 CY including the Embankment for Variability Factor of 4,360 CY. However, it should be noted that the contract bid pay item amount was 914,765 CY, 153 CY more than the quantity on the plan sheet.

The Summary of Earthwork Quantities also included a line item under Subsoil Excavation labeled “+ 10% Variability Factor 875 CY”. The total Subsoil Excavation quantity was listed as 9,627 CY including the +10% Variability Factor of 875 CY. Additionally, the Summary of Earthwork Quantities included a line item under

Landfill Debris Excavation labeled “+ 10% Variability Factor 3,485 CY”. The total Landfill Debris Excavation quantity was listed as 38,335 CY including the +10% Variability Factor of 3,485 CY. The sum of the two excavation variability factors equals the quantity of the Embankment for Variability Factor:  $875 + 3,485 = 4,380$ .

A copy of plan sheet 15 has been included with this recommendation.

During the construction of the project the FDOT determined that the quantity of Subsoil Excavation and the quantity of Landfill Debris Excavation would under run and that the quantities labeled as +10% Variability Factor would not be required. Accordingly the FDOT issued a plan revision deleting the following quantity items:

Embankment

Embankment for Variability Factor of 4,360 CY

Subsoil Excavation

+10% Variability Factor of 875 CY

Landfill Debris Excavation

+10% Variability Factor of 3,485 CY

The disputed issue concerns whether or not the FDOT’s revisions to the pay item quantities was consistent with the terms of the contract, and whether or not DAB is due additional compensation.

## **Contractor Position**

The following summary of the Contractor’s position is based upon written materials submitted to the Board and upon the hearing presentation.

### **Key Points**

**1. DAB believes that the FDOT is not entitled to adjust the Plan Quantity without making any change in any plan dimension.**

DAB rejects the Department’s arbitrary and capricious deletion of the quantity of 4,513CY from the plan quantity for bid item 120-6 EMBANKMENT reducing payments to DAB by \$27,890.34 without changing ANY plan dimension. With no change in dimensions, no actual work was deducted from the job. The bid price does not change.

- The Plan Quantity is 914,765 CY. That is what DAB is to be paid per specifications and DAB will not accept one cubic yard less.
- The Department’s arbitrary reduction of the plan quantity by 4,360 CY on the basis of that the Department asserts that inclusion of the line “Embankment for Variability Factor” in the “SUMMARY OF EARTHWORK” on plan sheet 15 is a plan error is not credible. Clearly the EOR inserted this line into the table with premeditation and its inclusion was clearly evident to all bidders. This is an intentional act by the EOR and not an error.

- See Specification 9-3.2. The specification is clear that, for claims regarding errors in plan quantity for “earthwork items”, the claimant must produce proof that there is some difference in the cross sections or the original ground were in error. The Department certainly has never produced evidence of that fact as is clearly required by the specifications.

## **2. DAB relied upon the quantities shown in the plan as the basis for our bid calculations.**

- Supplemental Specification 2-3.2 clearly requires the contractor to base his bid on the constructing the work within the authorized plan dimensions:
- DAB based its bid (\$5,653,247.70) on the actual amount of work shown on the plans within the plan dimensions as required by the specifications.
- The specification also requires the Department to use these quantities for Final Payment.

### **Summary**

DAB expects to be paid the full bid price of \$5,653,247.70 be adjusted only by actual changes in the work as have been required by changes in the plan dimensions upon which DAB was required to base its bid.

### **FDOT Position**

The following summary of the FDOT’s position is based upon written materials submitted to the Board and upon the hearing presentation.

### **Key Points**

#### **1. The Department’s adjustment of the pay item quantities is consistent with the facts and the contract provisions.**

Plan Sheet No. 15 of the original Contract Documents (Exhibit A), Summary of Earthwork Table, under the Embankment item, shows a line for Embankment for Variability Factor of 4,360 CY. This 4,360 CY (875+3,485) for variability factor is the summation of 875 CY from the +10% variability factor under the Subsoil Excavation and 3,485 CY from the +10% variability factor under the Landfill Debris Excavation.

- Specification 120-13.7 states that Embankment is a Plan Quantity.
- Specification 9-1.3.2 defines a Plan Quantity and how it is calculated.
- Specification 120-13.7 states how an overrun or underrun of plan quantities for Subsoil Excavation which results in a corresponding increase or decrease in embankment will be considered as an authorized plan change...
- Specification 9-3.2.2 states how an authorized plan change will result in an increase or decrease in the quantity of that item, the Department will revise the plan quantity accordingly.

The Embankment pay item in this project is a major item of work based on the fact that;

$$912,612\text{cy (total original embankment)} \times \$6.18/\text{cy (bid unit price)} = \$5,652,302$$

And

$$\frac{\$5,652,602 \text{ (Embankment bid)}}{\$23,884,444.44 \text{ (original contract amount)}} = 23.67\%$$

Therefore embankment is 23.67% of the total contract amount.

The adjustment is less than 0.5% of the total embankment.

$$\frac{4,360\text{cy (underrun adjustment)}}{914,612\text{cy (Total Embankment)}} = 0.47\%$$

The total adjustment would be a reduction of \$4,360 CY embankment which represents in an adjustment of -\$26,944.80

$$[4,360\text{cy (underrun adjustment)} \times \$6.18/\text{cy (bid Unit Price)}] = \$26,944.80 \text{ adjustment.}$$

Therefore due to the fact that this is less than a 25% adjustment, the underrun adjustment would be at the contract unit price.

### Summary

Based on the fact that the quantities are located in the earthwork table and the excavation listed in these tables had items that were not performed, the Department must adjust the plan quantity of the embankment by the underrun quantity of Subsoil Excavation and Landfill Debris Excavation; thus adjusting the amount paid for this pay item.

While embankment is a major item of work, the amount of adjustment is less than the 25% threshold and as such will be adjusted at the contract unit price.

## Disputes Review Board Findings

- 1. The original plans contained the following three items listed as variability factors:**

Embankment

Embankment for Variability Factor of 4,360 CY

Subsoil Excavation

+10% Variability Factor of 3,485 CY

Landfill Debris Excavation

+10% Variability Factor of 875 CY

- 2. The variability factor items were included by the EOR in the quantity calculations as a contingency for uncertain subsoil conditions.**
- 3. Actual work quantities for Subsoil Excavation and Landfill Debris Excavation are under run, consequently the +10% variability quantities will not be performed.**
- 4. As a result of not performing the +10% excavations variability, the Embankment Variability Factor of 4,360 CY will not be performed.**

- 5. Relevant Contract Provisions:**

**9-3.2 Payment Based on Plan Quantity:<sup>1</sup>**

**9-3.2.1 Error in Plan Quantity:** As used in this Article, the term “substantial error” is defined as the smaller of (a) or (b) below:

- (a) a difference between the original plan quantity and final quantity of more than 5%,
- (b) a change in quantity which causes a change in the amount payable of more than \$5,000.

On multiple job Contracts, changes made to an individual pay item due to substantial errors will be based on the entire Contract quantity for that pay item.

Where the pay quantity for any item is designated to be the original plan quantity, the Department will revise such quantity only in the event that the Department determines it is in substantial error. In general, the Department will determine such revisions by final measurement, plan calculations, or both, as additions to or deductions from plan quantities.

In the event that either the Department or the Contractor contends that the plan quantity for any item is in error and additional or less compensation is thereby due, the claimant shall submit, at their own expense, evidence of such in the form of acceptable and verifiable measurements or calculations. The Department will not revise the plan

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<sup>1</sup> Sub-article 9-3.2 from FDOT 2004 Standard Specification for Roads and Bridge Construction

quantity solely on the basis of a particular method of construction that the Contractor selects. For earthwork items, the claimant must note any differences in the original ground surfaces from that shown in the original plan cross-sections that would result in a substantial error to the plan quantity, and must be properly documented by appropriate verifiable level notes, acceptable to both the Contractor and the Department, prior to disturbance of the original ground surface by construction operations. The claimant shall support any claim based upon a substantial error for differences in the original ground surface by documentation as provided above.

**120-2.3 Subsoil Excavation:<sup>2</sup> .....**

The quantity of material required to replace the excavated material and to raise the elevation of the roadway to the bottom of the template will be paid for under Embankment or Borrow Excavation (Truck Measure).

**120-13.7 Embankment:<sup>3</sup>** The quantity will be at the plan quantity. .... If there are authorized changes in plan dimensions or if errors in plan quantities are detected, plan quantity will be adjusted as provided in 9-3.2.

.....Any overrun or underrun of plan quantity for Subsoil Excavation which results in a corresponding increase or decrease in embankment will be considered as an authorized plan change for adjustment purposes as defined in 9-3.2.2.

- 6. Both parties agree that the Subsoil Excavation is under run and that the amounts listed as +10% Variability Factor in both Subsoil Excavation (875 CY) and Landfill Debris Excavation (3485 CY) will not be performed. Both parties agree that due to this reduction in Excavation, the original plan quantity of Embankment is overstated by 4,360CY.**
- 7. The quantity in dispute qualifies as a “substantial error” as defined by Sub-article 9-3.2.**

## **Disputes Review Board Recommendation**

Clearly the contract provides for adjustments to Plan Quantities when a substantial error has been made in the original plan quantity. This remedy is made available to either party. The apparent intent is to insure that the final plan quantity is a reasonably accurate representation of the actual work quantity. Consider the following contract language from Sub-article 9-3.2:

“Where the pay quantity for any item is designated to be the original plan quantity, the Department will revise such quantity only in the event that the Department determines it is in substantial error. In

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<sup>2</sup> Sub-article 120-2.3 FDOT 2004 Standard Specification for Roads and Bridge Construction

<sup>3</sup> Sub-article 120-13.7 FDOT 2004 Standard Specifications for Roads and Bridge Construction

general, the Department will determine such revisions by final measurement, plan calculations, or both, as additions to or deductions from plan quantities.

In the event that either the Department or the Contractor contends that the plan quantity for any item is in error and additional or less compensation is thereby due, the claimant shall submit, at their own expense, evidence of such in the form of acceptable and verifiable measurements or calculations. The Department will not revise the plan quantity solely on the basis of a particular method of construction that the Contractor selects. For earthwork items, the claimant must note any differences in the original ground surfaces from that shown in the original plan cross-sections that would result in a substantial error to the plan quantity, and must be properly documented by appropriate verifiable level notes, acceptable to both the Contractor and the Department, prior to disturbance of the original ground surface by construction operations. The claimant shall support any claim based upon a substantial error for differences in the original ground surface by documentation as provided above.”

DAB’s argument is that Sub-article 9-3.2 permits a revision of an earthwork plan quantity only if one of the parties can prove that the original ground surface differs from that shown in the original plan cross sections.

However, in the issue at hand, the source of the error does not involve differences in the original ground surfaces from that shown in the original cross-sections. Both parties have acknowledged that the dispute does not involve a difference between the original plan cross sections and the original ground surface. The issue at hand is that the calculated plan quantity is not correct. Variability adjustments that proved not to be required were included in the quantity calculation.

Taken as a whole, Sub-article 9-3.2 allows a revision to the original plan quantity if it can be shown to be in substantial error, by either party. DAB’s narrow interpretation would preclude the revision of an original plan quantity earthwork item for causes other than differences between the original plan cross sections and the original ground surface. Other sources of error may exist, such as an error in calculation. The plan cross sections could correctly match the existing ground surface, and the plan quantity could still be incorrectly calculated and incorrectly represented in the original contract documents. Denying adjustment of an acknowledged substantial error would defeat the objective of Sub-article 9-3.2.

The FDOT’s revision to the Embankment Pay Item Quantity by the deletion of the Embankment Variability Factor is consistent with the contract provisions. **Accordingly, DAB is not entitled to additional compensation.**

### **Additional Comments by the Disputes Review Board**

The DRB is appropriately constrained by the terms of the contract, and has offered the above recommendation based upon our understanding of the terms of the contract agreement. However, it may be also appropriate for the FDOT to give consideration to the issue of fairness. DAB’s statement that they developed the cost of performing the work indicated on the plan cross sections and then calculated their unit bid price based upon the original plan quantity, is credible. In the context of preparing a bid estimate and reviewing the Earthwork Quantity table provided on plan sheet 15, it would not be obvious that Embankment Variability Factor represented a corresponding additional Variability Factor added to Excavation. The Embankment Variability might have represented any of a number of other plausible factors. For example, it may have represented a subsidence factor.

The FDOT made an error in the calculation of plan quantities, as a consequence, DAB states that their unit bid price for Embankment was under estimated. It is not in the business interest of the FDOT to take advantage of a mistake it has made. The Department may wish to continue discussions with DAB concerning an equitable resolution of this issue.

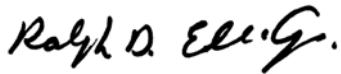
The Board appreciates the cooperation of all parties and the information presented for review in order to make this recommendation.

I certify that I have participated in all meetings and discussions regarding the issues and concur with the findings and recommendation.

Respectfully submitted,  
Disputes Review Board

Ralph Ellis Jr. – Chairman  
Mike N. Zembillas – Member  
George W. Seel - Member

Signed for all with the concurrence of all members.



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Ralph D. Ellis, Jr.  
Chairman



Plan Sheet 15

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SUMMARY OF GUARDRAIL									
LOCATION STA. TO STA.	SIDE	GUARDRAIL (LF)		END ANCHORAGE ASSEMBLIES (EA)				REMARKS	FIELD BOOK REFERENCE
		ROADWAY		TYPE II		SRT 350			
		P	F	P	F	P	F		
FROM 397+91.30 TO 420+68.59	RT	2,250.0				1			
FROM 398+98.60 TO 420+35.38	LT	2,162.5		1					
FROM 418+23 TO 420+61.17	MED	381.25							
FROM 422+02.33 TO 432+02.33	LT	1,000.0				1			
FROM 422+09.75 TO 424+47.54	MED	381.25							
FROM 422+35.54 TO 431+10.54	RT	875.0		1					
TOTAL		7,050.0		2		2			

SUMMARY OF EARTHWORK		
DESCRIPTION	P	F
	CY	CY
<b>ROADWAY EXCAVATION</b>		
MAINLINE	77,374	
CR 484A	1,945	
US 301	1,919	
US 441	2,334	
DRIVE	275	
DITCH STORAGE AREA	6,665	
POND 2	8,182	
POND 3	6,938	
POND 4	18,896	
POND 5A	17,406	
POND 5B	1,421	
POND 6	20,453	
WRA II N	134,322	
WRA II S	78,463	
TOTAL ROADWAY EXCAVATION	375,993	
<b>EMBANKMENT</b>		
MAINLINE	808,955	
CR 484A	12,470	
US 301	4,010	
US 441	1,962	
DRIVE	90	
DITCH STORAGE AREA	71	
POND 2	15,574	
POND 3	1,953	
POND 4	1,657	
POND 5A	1,187	
POND 5B	12,835	
POND 6	209	
WRA IIN (EMBANK. BACKFILL) (A-3 ONLY)	30,952	
WRA IIS (EMBANK. BACKFILL) (A-3 ONLY)	18,327	
EMBANKMENT FOR VARIABILITY FACTOR	4,360	
TOTAL EMBANKMENT	914,612	
<b>SUBSOIL EXCAVATION</b>		
MAINLINE	7,375	
US 301	1,190	
US 441	187	
+10% VARIABILITY FACTOR	875	
TOTAL SUBSOIL EXCAVATION	9,627	
<b>LANDFILL DEBRIS EXCAVATION</b>		
MAINLINE	31,453	
DITCH STORAGE AREA	3,397	
+10% VARIABILITY FACTOR	3,485	
TOTAL LANDFILL DEBRIS EXCAVATION	38,335	

PAY ITEM NOTES

NOTE (CON'T)

- 102-1: INCLUDES THE COST OF ALL MATERIALS REQUIRED FOR CONSTRUCTION OF TEMPORARY PAVEMENT INCLUDING ASPHALTIC CONCRETE IN AREAS INDICATED IN TRAFFIC CONTROL PLANS. ESTIMATED QUANTITY IS 5830 SY. INCLUDES THE COST OF FURNISHING, PLACING AND REMOVING COMMERCIAL MATERIAL FOR DRIVEWAY MAINTENANCE.
- 104-4: INCLUDES LITTER PICK-UP AND MOWING.
- 104-10-1: BASED ON REPLACEMENT EVERY 3 MONTHS.
- 104-13-1: BASED ON REPLACEMENT EVERY 12 MONTHS.
- 110-1-1: INCLUDES THE COST OF REMOVAL FOR SIDEWALK, CURB & GUTTER, SLOPE PAVEMENT AND DITCH PAVEMENT. ALSO INCLUDES THE COST OF REMOVAL AND DISPOSAL OF COGON GRASS. CLEARING AND GRUBBING THIS MATERIAL SHALL BE DISPOSED OF SEPARATE FROM THE OTHER MATERIAL.
- 145-2: INCLUDES ALL LAYERS OF GEOTEXTILES/GEOSYNTHETICS.
- 400-1-15: INCLUDES 5 CY FOR MISCELLANEOUS CONSTRUCTION, AS DIRECTED BY THE ENGINEER.
- 530-3-4: INCLUDES REQUIRED FILTER FABRIC TYPE D-2 WITH AN A.O.S. (SIEVE NUMBER) OF 50-70.
- 550-10-222 & 550-60-235: TYPE 'B' FENCE IS TO BE COATED WITH BLACK PVC CLASS 'A' PER INDEX 802.
- 570-5: BASED ON 1 APPLICATION.
- 710: THE QUANTITIES OF PAINT FOR TEMPORARY PAVEMENT MARKINGS ARE INCLUDED IN THE TABULATION OF QUANTITIES IN THE SIGNING AND PAVEMENT MARKINGS PLANS.

- 2) DUE TO THE EXTREME VARIABILITY OF THE SUBSURFACE PROFILE AND THE DIFFICULTIES ASSOCIATED WITH SEPARATING THE SOILS, ALL OF THE EXCAVATION SHALL BE CONSIDERED AS UNUSABLE FOR SELECT FILL MATERIALS FOR BID PURPOSES. DURING CONSTRUCTION, EXCAVATED MATERIALS MAY BE USED FOR SELECT FILL ONLY IF DEEMED SELECT AND AS DIRECTED BY THE ENGINEER.
- 3) STRATUM NUMBERS 1 THROUGH 8 (SEE ROADWAY SOIL SURVEY SHEET 114) WILL BE DIFFICULT TO DEWATER, EXCAVATE, AND/OR PENETRATE AND WILL REQUIRE SPECIAL EQUIPMENT AND/OR PROCEDURES TO FACILITATE DEWATERING, EXCAVATION, AND/OR PENETRATION.
- 4) THE MATERIAL TO BE DISPLACED BY THE STORM SEWER (OR DRAINAGE STRUCTURE) SYSTEM AND STORM SEWER CONSTRUCTION CONTAINS PLASTIC / HIGH PLASTIC / LIMESTONE / BOULDERS. SEE NOTE 3 ABOVE AND NOTES 5 AND 6 BELOW.
- 5) LIMESTONE BOULDERS (INCLUDING LARGE BOULDERS), ROCKS OR OTHER HARD MATERIALS OF VARIOUS SHAPES AND SIZES SHALL BE ANTICIPATED TO BE ENCOUNTERED IN ALL EXCAVATIONS AT VARIOUS DEPTHS THROUGHOUT THE SUBSURFACE PROFILE. THE CONTRACTOR SHALL ANTICIPATE THE NEED FOR SPECIAL EQUIPMENT AND/OR PROCEDURES TO FACILITATE EXCAVATIONS, DEWATERING, PENETRATION AND DISPOSAL OFFSITE.
- 6) STRATUM NUMBERS 1, 5, 6 AND 8 (SEE WRA SOIL SURVEY SHEET 114 (WRA IIN AND IS ONLY)) WILL BE DIFFICULT TO DEWATER, EXCAVATE AND/OR PENETRATE AND WILL REQUIRE SPECIAL EQUIPMENT AND/OR PROCEDURES TO FACILITATE DEWATERING, EXCAVATION AND/OR PENETRATION.
- 7) SEE TECHNICAL SPECIAL PROVISIONS ADDRESSING LINER AND LANDFILL DEBRIS.
- 8) LANDFILL DEBRIS SHALL BE DISPOSED TO THE APPROPRIATE LANDFILL BY THE CONTRACTOR.
- 9) COGON GRASS IS PRESENT ON THIS PROJECT REMOVAL AND DISPOSAL IS PAID UNDER ITEM NO. 110-1-1. CLEARING AND GRUBBING THIS MATERIAL SHALL BE DISPOSED OF SEPARATE FROM THE OTHER MATERIAL.
- 10) LITTER PICK-UP WILL BE PAID UNDER ITEM NO. 104-4, MOWING.

NOTE

IF EARTHWORK HAS BEEN CALCULATED USING THE LIMESTONE BASE OPTION, IF ANOTHER OPTION IS CONSTRUCTED, THERE SHALL BE NO REVISION TO THE EARTHWORK QUANTITIES FOR WHICH PAYMENT IS MADE BY PLAN QUANTITY.

REVISIONS			
DATE	BY	DESCRIPTION	DATE

ROGER P. SCHWDT, P.E.  
P.E. LICENSE NO. 40234

**PARSONS**  
225 E. ROBINSON ST., SUITE 300 ORLANDO, FL 32801  
PHONE: (407) 316-8400 / FAX: (407) 316-8871  
CERTIFICATE OF AUTHORIZATION NO. 1838

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
CR 484	MARION	241602-1-52-01

SUMMARY OF QUANTITIES

SHEET NO.

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NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 60S-2.003, F.A.C.