

DISPUTE REVIEW BOARD RECOMMENDATION

April 27, 2009

Mr. Vernon Walker
Community Asphalt Corp.
7795 Hooper Road
West Palm Beach, FL 33411

Mr. Patrick Kennedy
TBE Group
11641 Kew Gardens Ave, Suite 101
Palm Beach Gardens, Fl 33410

RE: S.R. 9 (I-95) from So.of PGA Blvd to So.of Donald Ross Rd.
F.P.ID 406870-1-52-01
Palm Beach County

Subject: Auger Cast Pile Grout Quantities Issue

Dear Sirs:

The Contractor requested a Dispute Review Board Hearing per the conditions set forth in the DRB Three Party Agreement in order to resolve an issue of entitlement for compensation.

Pertinent information and rebuttals relating to the parties positions were provided to the DRB prior to the hearing held on April 21, 2009 at the Palm Beach Operations Center. Both parties orally presented their positions during the hearing.

The following are quotes from the position papers, rebuttals and some paraphrasing of the positions.

Contractor's Position:

"The Department has demanded that a quantity of grout equal to the volume found in a 5 ft length of ACP be sent to waste for the pile to be deemed acceptable. The specifications do not require this condition and the Contractor is entitled to costs associated with furnishing, placing, and disposal of excess grout used to construct the ACP Foundations for the Sound Walls."

The Department's inspection team has misinterpreted the specification requirement. "The specification includes the terms "pressure" and "head" which have a physical relationship allowing pressure to be expressed in

terms of a length of head. The specification does not include the term volume as related to this step in the installation process. The pressure induced by stroking the pump an equivalent number of times to equal the volume of a 5' length of pile greatly exceeds the specified pressure equivalent to a head of 5 feet, and places more stress on the pump equipment causing failures.”

“Specification 455-44, Item 11, sets the requirements for the minimum volume of grout to be placed in the hole. All of the minimum requirements were met and exceeded for each of the foundations on the project.... However, the inspection team directed the Contractor to greatly exceed the minimum requirements and did not allow the Contractor to implement means and methods to construct the ACP foundations and control the amount of grout waste....”

Department’s Position:

“The Department does not recognize any entitlement for additional compensation to the Contractor related to this issue. The Department contends that the grout included in the Auger Cast Piles was required as per the Contract Specifications.”

“The Contractor does not dispute the understanding that the specification requires they develop and carry throughout installation a 5 foot head of grout. As the utilization of “head” is the requirement for the method of measurement and head is by definition a depth of liquid, the resultant interpretation is that the specification requires a 5 foot column of grout material. The dimensions of this column of material are defined by specification as being a depth of 5 feet at a circumference of the perimeter of the auger.... These are the dimensions utilized by the Department’s inspection staff on this project to ensure placement of the 5 foot surplus grout head.”

“The Contractor offers no alternate differing interpretation of specification 455-44, just the assertion that the requirement places unnecessary pressure on the equipment and in the hole.”

“The specification in section 455-44 (11), clearly identifies two things; (1) the surplus grout used to develop the grout head is to be removed from the hole with the requirement to ensure that grout begins to flow out of the hole when the cutting head is at least 5 feet below the ground surface, (2) the material utilized for the development of the 5 foot head is not to be included in the determination of the minimum volume of grout material required for acceptance.”

“The specification in section 455-44 (12), clearly states that the minimum grouting requirements be verified by a theoretical volumetric measurement in 5 foot increments.”

“Based on the above specifications and the fact that the volume of grout placed was as required, it is the Department’s position the Contractor was required to place no more than the volume of grout that should have been anticipated at the time of bid. Furthermore, it is our belief that the Contractor did recognize the requirements of the specifications as they committed an understanding in their Installation Plan as well as their Demonstration Pile and additionally, they cast 49 piles in conformance before notification of any issue with the requirements. Therefore, the Department concludes that there is no entitlement for additional compensation for any additional grout quantities.”

Relevant Specifications:

455-42. 7: *Use a grout pump/system equipped with a pressure gauge to accurately monitor the pressure of the grout flow. Test and calibrate the equipment during construction of the demonstration pile to demonstrate flow rate measurement accuracy of +/- 3% over the range of the grouting pressures anticipated during this work.*

455-44. 10: *Pump the grout with sufficient pressure as the auger is withdrawn to fill the auger hole, preventing hole collapse and to cause the lateral penetration of the grout into soft or porous zones of the surrounding soil. Carry a head of at least 5 feet of grout above the injection point around the perimeter of the auger to displace and remove any loose material from the hole. Maintain positive rotation of the auger at least until placement of the grout.*

455-44. 11: *Once the grout head has been established, greatly reduce the speed of rotation of the auger and commence extraction at a rate consistent with the pump discharge. Maintain extraction at a steady rate to prevent a locked-in auger, necking of the pile, or a substantially reduced pile section. Ensure grout starts flowing out from the hole when the cutting head is at least 5 feet below the ground surface. Place a minimum volume of grout in the hole of at least 115% of the column of the auger hole from a depth of 5 feet to the tip. Place a minimum volume of grout in the hole of at least 105% of the column of the auger hole from the ground surface to a depth of 5 feet. Do not include any grout needed to create surplus grout head in the volume of grout placed into the hole.*

455-44 12: *Assume responsibility for the grout volume placed.*

455-48: *The Engineer will monitor pile installation.*

455-50.2: *Price and payment will also include the removal and proper disposal off site of all spoil from the auger operation and all excess grout displaced from the auger hole.*

534-10: *Price and payment will be full compensation for all work specified in this Section, included but not limited to: furnishing all materials, labor, panels, special panels, posts, collars, reinforcing steel, foundations...*

Board's Findings:

1. It was clearly understood by both parties that the objective of the Auger Cast Piles grouting was to provide a structural foundation for the Sound Barrier Walls. To accomplish this the FDOT Standard Specification 455-44 stated the requirements for pile installation using an auger to drill and remove the ground and a pump system to fill the space with grout mix. The Contractor was to submit an Installation Plan and construct a demonstration pile (this was done and it met the specifications and was accepted by the Department). The requirements of the specification were to insure that an acceptable pile could be placed without reduced cross section, contaminated grout, lack of grout consolidation, or deficient grout strength.
2. The Department and the Contractor agreed that the purpose of the grout head was to displace and remove any loose material from the hole. The FDOT Specification says to "carry a head of at least 5 feet of grout above the injection point around the perimeter of the auger to displace and remove any loose material from the hole" and the Contractor's Installation Plan says to "withdraw the auger from the hole, maintaining grout head of 5 feet throughout extraction" and to "clean up any excess grout". This method was followed during construction and it identified an amount of contaminated grout that had to be removed and disposed of that was not to be included in the minimum volume of grout placed in the hole.
3. The Contractor wanted to convert head to pressure. There is no specification that allows this nor is there a conversion factor shown in the contract documents. There was no documentation provided by the Contractor to the Department requesting that conversion.
4. It is clear from the above Specifications that the grout pump system was to be used to monitor the grout flow and to fill the auger hole, preventing collapse and to cause lateral grout penetration into the soil. The head of 5 feet of grout was to remove loose soil from the hole. As stated previously, both parties realized that the relationship between the grout

pump pressure and the head of grout was to maintain the head throughout extraction of the auger from the hole.

5. After reviewing all of the information submitted and the pertinent Contract Documents, the Board could not see where the Department's inspection team may have directed the Contractor to exceed the quantity of grout required by the Specifications to construct the ACP foundations.

Board Recommendation:

Based on the materials submitted and presentations at the DRB Hearing, the Board recommends that there is no entitlement to additional compensation for furnishing, placing and disposal of excess grout used to construct the Auger Cast Pile Foundations for the Sound Walls.

The Board sincerely appreciates the cooperation of all parties and the information presented for 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 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,

Dispute Review Board:
James V. Moulton, Chairman
Don Henderson, Member
John W. Nutbrown, Member

Signed for and with the concurrence of all members:

James V. Moulton, Chairman

cc: Don Henderson
John W. Nutbrown