DIRECTOR'S CLAIMS BOARD
ODOT Project 1060(09)
Claim 07-091060-02
Final Quantities – 304 Base and Asphalt Surface course
Decided: January 8, 2013

On Wednesday, November 14, 2012 at 1:00 pm at ODOT's Central Office in Room 3A, the Director's Claims Board ("Board") heard oral presentations of RB Jergens Contractors, Inc. ("Jergens" or "Contractor") and ODOT District 7 ("District" or "ODOT") relative to the subject claim on Project 1060(09) MOT South Dixie Highway ("Project"). Prior to the oral presentations and in accordance with the Dispute Resolution and Administrative Claim Process set forth in the contract, the Board received written documentation from the Contractor on August 10, 2012 and from the District on September 10, 2012.

The Board consisted of: Gary Angles, P.E., State Construction Engineer ; Rachel Lewis, P.E., Administrator, Office of CADD and Mapping; and Keith Geiger, P.E., District Construction Administrator, D-5.

The District 7representatives at the hearing were: Greg Collier, P.S.; Scott LeBlanc, P.E., Dave Ley, P.E.

RB Jergens Contractors, Inc. was represented by: Vic Roberts, P.E.; Greg Siefring, P.E.

Andy Thompson represented the Federal Highway Administration (FHWA).

Pam Clawson, P.E., Dispute Resolution Coordinator, Division of Construction Management served as the Secretary of the Board.

PROJECT DESCRIPTION:
This project consisted of full depth reconstruction of 2053 feet of South Dixie Highway in the City of Vandalia by using flexible pavement, extending a box culvert, and installing drainage facilities, curb and gutter and median islands.

RB Jergens, Contractors, Inc. was awarded the contract which was executed on July 21, 2009. The original bid price was $1,604,944.67. The original contract completion date was May 31, 2010. The completion date was subsequently revised to August 12, 2010. There was an interim completion date which required construction of the north and southbound lanes prior to October 15, 2009. This interim date was subsequently revised to May 31, 2010. The physical work on the project was complete September 2, 2010. The current cost of the project is $1,607,046.91.

CLAIM OVERVIEW:
The Contractor claimed the original pavement design, along with subsequent revised pavement design(s), was flawed and/or improper causing the Contractor to expend additional granular and asphalt material primarily due to the perpetually piping 304 material. The quantities in dispute are:

287 CY of Aggregate Base @ $26.05/CY = $ 7,735.10
225 CY of asphalt surface material = $33,772.50

for a total claim value of $41,507.60.

During construction of the first phase of construction (northbound) the District was given notice by the

Contractor that soft subgrade conditions had been encountered. After review of the situation and discussion with the Contractor and the City, the District approved an alternative solution on November 17, 2009. This consisted of switching out the bottom 10" of 304 material shown in the original pavement design with 10" of #2 stone and filter fabric. The District accepted responsibility for this 14 day decision delay and paid $ 5,783 in delay costs. This decision was supported by the Director's Claims Board Step 3 decision dated April 8, 2011.

On November 18, 2009 the project received a half inch rain event that saturated the exposed subgrade and prevented the Contractor from proceeding. The colder weather that followed would not have allowed the subgrade to dry enough to perform the directed remedy in the 2009 construction season. On December 18, 2009 the Contractor was given an alternate design using Tenser BX 1300 Geogrid under the already revised fabric and #2 stone.

SUMMARY OF THE CONTRACTOR'S POSITION:

Jergens claimed District 7: (1) abandoned standard protocols (2) changed the plans during construction and finally (3) directed Jergens to build an unconventional, bad design which inherently required more asphalt and aggregate.

District 7 failed to remove any soft subgrade soil. During the design phase, the soil consultant found soft subgrade soil and recommended removing the soft subgrade. The designer created contract provisions that positively remove all soft subgrade along South Dixie Drive.

District 7 specified a 16" layer of 304 aggregate base – but District 7 failed to specify any asphalt road base, which, Jergens alleged, is standard on every ODOT project. ODOT's standard design consists of 6" of 304 aggregate base topped with between 6" and 9" of asphalt concrete road base (Item 301 or 302).

ODOT's standard pavement design , Jergens stated, requires either 301 or 302 apshalt base. District 7 specified a single 3½" layer of asphalt placed directly on top of the 304 aggregate. District 7 is aware that intermediate asphalt is not designed for this use.

District 7 refused to test the subgrade believing it was too wet. Jergens hired a testing firm to independently check the subgrade. Jergens consultant reported:

> *We have noted that on test No. 3 the density and compaction meets the specification and that the moisture was below optimum. However, the soil lift was deflecting or pumping…the subgrade is unstable.*

District 7 changed the plans and shifted from 16" fine 304 aggregate to a layer of plastic Tensar with 10" gap-graded number 2 stone covered with 6" of fine 304 aggregate. After building this base section, Jergens discovered that vibrating the fine aggregate during compaction causes the fines to shift into the open-graded number 2 stone. When asphalt layers were installed over the aggregate base and vibrated during compaction the 304 fines continue to sift still deeper into the number 2 stone. As a result the asphalt surface profiles shifts as the 304 fines sift while continuing to migrate downward.

Jergens pointed out in its submittal that as a rebuttal District 7 relies on a 1922 engineering formula invented for aggregate filter design for dam construction. It predicts whether fine aggregate particles will sift into coarser particles. The formula relies on having well graded aggregate on both sides. Open graded or gap-graded aggregate on either side defeats the formula's intent. By examination it is obvious that 304 fines will sift into the No. 2 stone, especially when vibrated.

After seeing more soft subgrade than budgeted, District 7 suspended Jergen's subgrade work and held a meeting with the City of Vandalia on November 4th. Jergens attended this meeting. District 7 told Vandalia it was the City's responsibility to pay for undercutting soft dirt. The Vandalia representative

said the City did not have the money and he did not have the authority to make changes. District 7 spent many precious days sorting out "who pays" while the project was in limbo. In its presentation Jergens stated this delay occurred during unusually dry, warm weather. From November 1 through November 18, 2009 the weather was sunny and dry with temperatures around 60°F. Neither the City nor ODOT budgeted enough money to build the project properly, Jergens stated.

On December 18, 2009, six weeks after suspending Jergen's subgrade construction, District 7 deleted the subgrade undercutting altogether and directed Jergens to install plastic geogrid, fabric and open-graded No. 2 stone with 304 on top. By this time the subgrade was frozen. In order to implement the new design it was necessary to cut out the frozen soil before installing the aggregate base in late December. Removing frozen soil requires more aggregate to take its place. As a courtesy to the project, Jergens agreed to pay for the extra aggregate.

District 7 later attempted to dodge delay responsibilities and even penalize Jergens $46,500 for late completion. Jergens no longer thinks that it is fair to pay for frozen soil removal – nor extra aggregate.

Jergens hired a pavement consultant to explain the problems encountered. It's report read:

> *It is the opinion of this writer that it is improper for ODOT to have imposed the same smoothness tolerances on the first layer of asphalt concrete mix as would typically be used when the intermediate asphalt layer is placed on top of a new underlying layer of asphalt concrete base course mix.*

And the report continued:

> *The change in pavement design and the improper use of the surface smoothness tolerances has resulted in RB Jergens having to place an additional asphalt concrete intermediate course layer in order to achieve the smoothness and tolerance values required by ODOT.*

The result of ODOT's deviation from its standards caused subgrade deflection under heavy construction traffic. 304 fines shifted into the open-graded number 2 stone, the subgrade continued to deflect and asphalt quantities rose beyond District 7's theoretical neat-line limits.

This project has just two parties – ODOT and RB Jergens. District 7 must follow ODOT design since South Dixie is an ODOT project. District 7 specified and built a non-ODOT design and used its superior bargaining position to insert improper ODOT tolerances.

In its presentation Jergens claimed its plan was to build the right side of the roadway, flip traffic and work in the winter installing sewer and storm water lines. When it began work in mid-September 2009 ODOT's inspector said the whole right side needed undercut. The inspector stopped Jergens from working because it couldn't maintain the ½" tolerance for the subgrade. It missed its opportunity to flip traffic as planned and couldn't do the pipe work in the winter. Jergens stated ODOT would not allow it to show work on its progress schedule during the winter without backing up the completion date (for example the completion date would move from May 1 to April 1 if it showed working one month in the winter).

ODOT did not make a decision as to how to stabilize the soft subgrade until November 17, 2009. The next day it rained ½" and saturated the subgrade. Jergens couldn't work. On December 16, 2009 ODOT again changed its design to 10" of #2 stone topped with 6" of 304 with geotextile (Tensor) in the bottom. Jergens was told to proceed but the subgrade could not support construction equipment. The District and Jergens decided to wait until the subgrade froze and scrape off the top frozen layer just before it installed the #2 stone. Jergens stated the inspector would not allow it to install the fabric and #2 stone until the subgrade met tolerances.

Jergens emphasized it repeatedly wrote letters to District 7 pushing for undercutting. The soil borings showed inadequate soils in the subgrade. There was visual evidence of poor subgrade. Jergens' soils

consultant's testing showed poor subgrade. The plans set up quantity for undercut. No undercutting was performed. On the day before the paving was done the subgrade was still pumping. The elastic subgrade created problems for Jergens. Jergens had to place more material and the owner benefitted.

This is a Vandalia pavement design. Vandalia always pays ticket quantity rather than neat line calculations, Jergens stated in its presentation.

In its presentation Jergens stated that while the project's pavement surface may look good now it will not maintain the Structural Number required by FHWA after 20 years. Jergens demonstrated, using two steel bars, that a thicker section has less flexibility than a thinner section. Jergens argued the constant flexing of the thinner pavement section would cause pavement failure sooner than an thicker pavement section.

SUMMARY OF THE DISTRICT'S POSITION:

During construction of the first phase of this project (Northbound lanes), the District was given Notice that soft subgrade conditions were encountered. The District felt this unstable condition was primarily due to high moisture content of the soil and that it could be stabilized through drying or disking. The Contractor wanted to undercut the entire first phase to address the situation. After review of the situation and discussion with the Contractor and the City of Vandalia, the District approved an alternate solution on November 17, 2009. This consisted of switching out the bottom 10" of 304 material with 10" of #2 stone and filter fabric. The District accepted responsibility for this 14 day decision period and the impacts of such. Change Order #38 was written for $5,783.

On November 18, 2009 the project received ½" of rain that saturated the exposed subgrade and prevented the Contractor from proceeding. The colder weather that followed and rainfall did not allow the subgrade to recover enough to perform the directed remedy throughout the remainder of the construction season as defined by the Contractor's CPM schedule. In an effort to progress the project and mitigate the existing delays, the Contractor and District continued to investigate options to create a stable subgrade and pavement structure. On December 18, 2009 a winter alternate was approved which the Contractor was able to install by the end of December. This alternate added Tensar BX 1300 Grid under the already revised fabric and #2 stone.

The Construction and Materials Specification Manual (C&MS) 104.02.A indicates that: "The Department reserves the right to revise the Contract Documents at any time. Such revisions do not invalidate the Contract or release the surety, and the Contractor agrees to perform the Work as revised." And C&MS 104.02.D reads: ""The Engineer may alter the Work as necessary to complete the Project."

The Contractor is requesting payment for 7081 CY of granular material. The District paid 6794 CY. Included in this paid total was 205 CY that represents the amount of 304 material that it will take to fill (plug) the surface of the #2 stone. In order to determine this void space the Project obtained guidance from the ODOT Aggregate Section Head in the Office of Materials Management. This leaves the difference of 287 CY ($7,735.10).

The Contractor's hypothesis that the 304 material perpetually sifts into the underlying #2 stone is not supported by the volume calculations when compared to the quantities requested. Analysis shows that all of the excess volume of 304 material can to attributed to uneven subgrade that was established by the Contractor due to proceeding in the winter in lieu of waiting for favorable weather in the Spring. This analysis used the Contractor supplied subgrade logs that were stamped by a Professional Surveyor to calculate end areas throughout the project. In the Southbound lanes the subgrade was over excavated requiring an additional 274

CY of granular material. In the Northbound lanes the subgrade was slightly over excavated requiring 17 CY of material for a total of 291 CY.

It is easy to see the District's analysis accounts for all of the "missing" granular material. If the 304 material had piped into the #2 stone as the Contractor had hypothesized the amount of 304 material used would have been significantly more than the volume of the hole in which the granular was placed.

The District also stated the Contractor was aware that this additional material would be required, purposely over excavated and acknowledged they were going to absorb the additional costs. In an e-mail from the Contractor to the Project dated 12/21/09 "Also, Roger, Bill Jergens, Bill Lonsbury and I met this morning to discuss an action plan. When the top couple-of-inches of surface freezes, we can peel-it-off and replace it with gravel (at our cost.)" From Project to Contractor dated 12/23/09 "If you decide to work on the remainder of the subgrade, ODOT will permit the subgrade to be up to 1" high and any amount deep so long as positive drainage is achieved. Any extra material or work required to maintain positive drainage will be paid by RBJ." From Contractor to Project dated 12/23/09 "We'll use GPS to cut 0.1 feet lower than plan subgrade." The District used this information in its assessing its decision to pursue yet another revision of the pavement structure to allow the Contractor to proceed in the winter rather than wait until spring when the soil could be dried out and re-compacted.

The Contractor referenced the 2009 field testing by its soils consultant. The testing cited consisted of four (4) tests along the project's 2053' length, one (1) of which showed instability when the top 12" met compaction and moisture requirements. This does nothing more than to validate one soft spot. The remaining locations were above optimum moisture and were not sufficiently compacted. The District felt that areas exhibiting soft subgrade characteristics were limited and that most areas would be acceptable if the Contractor implemented the appropriate moisture controls.

The Contractor questions the pavement design. The pavement design was based on a City of Vandalia standard pavement section. The Vandalia standard consists of 15" of 304 material, 1" of crusher run, 3" of leveling course asphalt and 2" of surface course. The design submitted for the Project was the same except the intermediate/leveling course was increased to 3½". The Office of Production in the District performed its standard review, checking the submitted pavement section for a sufficient Structural Number (SN). All checks indicated the submitted pavement section provided a SN greater than the minimum value which was established using the software WinPas. The appropriateness of this design is supported by the fact that the pavement has been in service for two years and is performing as intended.

The Contractor claims that the lack of sufficient budget was the sole factor in the decision making process and that somehow there was arguing between the City of Vandalia and District as to who was going to pay for any additional costs. The District has a fiduciary responsibility to be good stewards with the tax dollars of the local, state and federal governments. The District tried to evaluate the cost of multiple remedies as one parameter in the decision making process. The District stated there never was any confusion as to the roles of the different agencies. ODOT was administering the project with all contract administration responsibilities. The City of Vandalia was the ultimate owner of the facility and was consulted when multiple remedies existed, each with its own cost and long term benefit. The Contractor wanted to forego any evaluation and analysis and simply undercut the entire project, as this was in the Contractor's best interest.

The asphalt overage can be attributed to the Contractor's layout/grade, means and methods and combining Maintenance of Traffic (MOT) phases. Originally the project was to be

constructed by working on 25' of the right lane, then 25' on the left lane, then the last 8.5' in the center (Figure A).

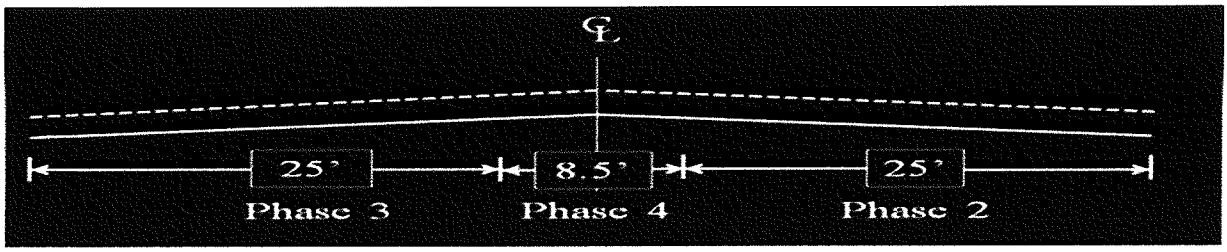

Figure A

Jergens modified this MOT plan to work on the first 25' of the right lane and then combined the center portion with the left lane and worked on the left 33.5' as one phase (Figure B). This was done without discussing the phasing change with ODOT.

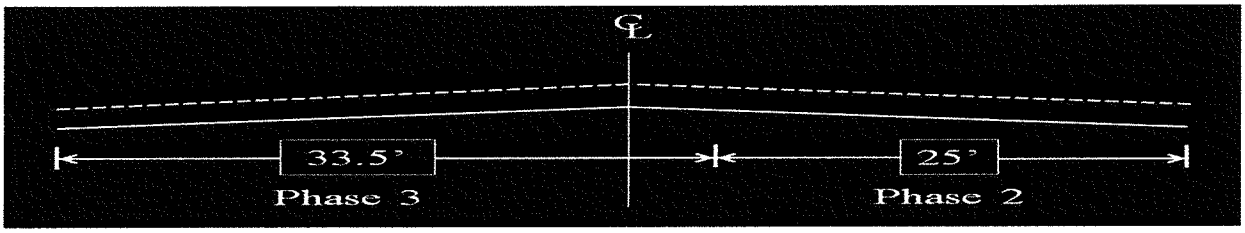

Figure B

During placement of the right lane (phase 2 below – yellow dotted) the Contractor laid additional asphalt over portions of the phase that created high spots that required grinding to correct (Figure C).

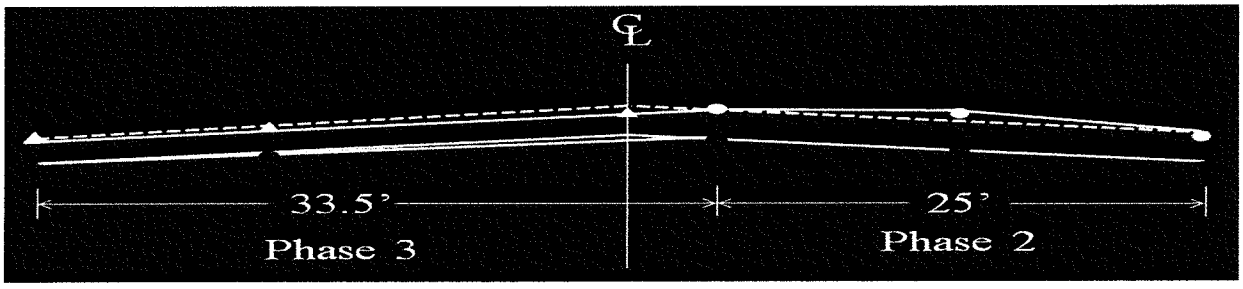

Figure C

During placement of the left and center phase (phase 3 above – yellow triangle line) the Contractor did not account for the phase line movement and subsequently did not place the crown in the pavement. The correction was to mill off asphalt that was placed too high in phase 2 and place a variable depth scratch course (dashed line) of asphalt to create a constant cross slope, which in turn would allow for a uniform 1.5" surface coarse placement. This variable depth scratch course should have been from 0" at edge of pavement to 1.5" at the center line. Project documentation indicates the Contractor was notified during placement that the scratch course was being applied too thick but the Contractor ignored this communication. Since the Contractor started the variable scratch course too thick and held a constant cross slope, the thickness at the crown was in excess of 2½" or more. Elevations taken throughout the project show variations from plan in excess of 2".

The Contractor's means and methods and/or workmanship have been shown to be contributing factors, and potentially the only factors, in the project's asphalt overruns. The Contractor admitted in a project meeting on July 28, 2010 that the phasing had been a mistake.

The design in the Contract drawings met the required design Structural Number and the revised pavement section was even stouter. In addition, the design section was a City of Vandalia standard that has been successfully used on a variety of other projects and is performing as intended on this now 2 year old pavement.

DIRECTOR'S CLAIMS BOARD FINDINGS:

Facts

After careful review of the submitted documents and with due consideration of the information provided at the hearing, the Board determined the following to be significant findings relevant to the issue of entitlement:

1. ODOT administered this project for the City of Vandalia.
2. The Project included the standard City of Vandalia pavement section: 15" of 304 aggregate topped with 3½" of intermediate asphalt course and 1½" of surface asphalt course.
3. The Structural Number for this pavement design was checked by D-7 and determined to be sufficient.
4. An adjoining section of South Dixie Highway was previously constructed by this Contractor with this pavement buildup but it never questioned the design on that project.
5. The Project included 970 CY of undercut. Most of that work was non-performed from the Project due to the revised pavement build up modifications.
6. The Maintenance of Traffic prescribed in the plan required reconstruction of phase 2, the right 25' pavement; phase 3, the left 25' pavement and finally phase 4, the 8.5' in the median.
7. Jergens chose to change the MOT and constructed phase 2, the right 25' pavement and then constructed phase 3 and phase 4 together, the remaining 33.5' pavement width on the left.
8. Jergens did not request or discuss the phasing changes with D-7.
9. The RB Jergens CPM schedule showed the project was 19 days behind schedule of the Contractor's own accord, on November 3, 2009, prior to the subgrade issue.
10. Jergens notified District 7 it encountered soft subgrade on November 4, 2009.
11. The only quantitative tests run on the project's subgrade were performed on November 12, 2009 by Jergen's consultant. Four tests were taken. Three of the four tests were above optimum moisture and below 98% compaction.
12. The test data included in Jergens' claim showed:
    - Test 1 Curve H Requires: 11.2% moisture and 124.2 lb/ft^3 max. dry density
      Measured: 11.9% moisture and 97.34% compaction (moisture 0.7% high)
    - Test 2 Curve D Requires: 8.5% moisture and 134.1 lb/ft^3 max. dry density
      Measured: 14.2% moisture and 90.9% compaction (moisture 5.7% high)
    - Test 3 Curve I Requires: 11.9% moisture and 121.7 lb/ft^3 max. dry density
      Measured: 8.7% moisture and 106.7% compaction (moisture 3.2% low)
    - Test 4 Curve H Requires: 11.2% moisture and 124.2 lb/ft^3 max. dry density
      Measured: 13.2% moisture and 97.58% compaction (moisture 2.0% high)
13. Jergens responded to a question by the Board that it was never told to disc. It said it did not have any data showing the moisture was too high in the subgrade to require disking. It never did attempt to dry the material by disking.
14. Disking and drying wet soil is a standard construction practice and required by C&MS 103.07.A.
15. The weather between November 1 and November 18, 2012 was sunny and dry with temperatures about 60°.
16. ODOT's inspector would not allow Jergens to proceed with installing the 304 Aggregate Base until the subgrade met surface smoothness tolerances.

17. On November 17, 2009 the District permitted the Contractor to use a modified pavement section: filter fabric placed on the subgrade then 10" of #2 stone topped with 6" of 304 aggregate, then overlaid with 3½" of intermediate asphalt course and 1½" of surface course.
18. The project experienced a ½" rain on November 18, 2009 and the weather turned cold and rainy causing further problems constructing the subgrade.
19. On December 18, 2009 the District permitted the Contractor to use a different modified pavement section: geo-fabric on the subgrade, BX1300 Tensar over the fabric, 10" of #2 stone, 6" of 304 Aggregate Base, the overlaid with 3½" of intermediate asphalt course and 1½" surface course.
20. 104.02.A indicates that: "The Department reserves the right to revise the Contract Documents at any time. Such revisions do not invalidate the Contract or release the surety, and the Contractor agrees to perform the Work as revised."

Conclusions

This claim is a dispute over final quantities for 304 and 446 items. The Contractor wants paid based on the volume indicated by delivery tickets. ODOT's payment method, as outlined in the specification manual, is the measured-in-place calculated volume.

C&MS 304.07 Method of Measurement reads: "The Department will measure Aggregate Base by the number of cubic yards (cubic meters) computed from the profile grade and typical sections, compacted in place."

C&MS 446.07 Basis of Payment reads: "The Department will pay for accepted quantities, completed in place, at the contract prices, as modified by 446.05, as follows: Item, 446; Unit, Cubic Yard; Description, Asphalt Concrete Intermediate Course Type ___."

The Contractor claims two circumstances changed the original bidding conditions and caused the use of more 304 and 446 material than would be determined by ODOT's neat line calculations. First, Jergens claims the subgrade was poor; therefore, it was unable to maintain a consistent foundation on which to construct the pavement buildup. Without a consistent grade it would be impossible to get an accurate measure of in place volume, it argues. Next, it maintains the pavement redesign ODOT directed it to use allowed fines (304 material) to filter through the larger stone (#2's) requiring additional material to fill the voids. Therefore, Jergens contends, ODOT should pay for all the materials used based on delivery tickets documenting material received.

C&MS 203.01 states the Contractor is responsible for "preparing suitable subgrade material by drying, compacting, proof rolling, and grading." Testimony by both parties and the fact that three of the four compaction tests taken by the Contractor's consultant show the material was above optimum moisture leads the Board to conclude the material was too wet to compact in situ. C&MS 204.03, Compaction of the Subgrade specifies: "Use the moisture controls specified in 203.07.A." C&MS 203.07.A reads in part:

> *Before or during compaction, allow the embankment material that contains excess moisture to dry to a moisture content needed to meet the density requirements. Continue drying until the required moisture is uniform throughout the lift. However, for material that displays pronounced elasticity or deformation under the action of loaded rubber tire construction equipment or other equipment, reduce the moisture content to secure stability. Expedite and manipulate the embankment material by drying the wet embankment material by using plows or discs; by adding dry material, lime, or cement; or by other methods.*

When asked by the Board "Did you attempt to disc and dry?" the Contractor stated that the ODOT inspector would not take tests because the material was too wet. The Contractor went on to argue that theoretically the only way to get stability was to remove and replace the material. Jergens did not make

an attempt to dry the material in spite of the uncommonly good weather the first two weeks of November. ODOT is not responsible for providing test data to contractors to help determine means and methods. ODOT need only test subgrade compaction to determine if subgrade is ready for the subbase material. In addition, per RB Jergens' CPM schedule, they were 19 days behind schedule due to their own accord, on November 3, 2009 prior to encountering the soft subgrade issue.

The plans include a note adding 970 CY for subgrade undercutting. The note recommends undercutting from station 356+75 to 360+75 or 400 LF on a 2050 LF project, approximately 20%. Jergens' argument that ODOT did not follow the plan with respect to undercutting does not address 80% of the project. C&MS 104.02.A indicates that: "The Department reserves the right to revise the Contract Documents at any time. Such revisions do not invalidate the Contract or release the surety, and the Contractor agrees to perform the Work as revised."

The Board was not presented with any evidence, written or oral, indicating ODOT gave direction to Jergens to stop (suspend) work on the subgrade. ODOT merely held Jergens to the tolerances required for subgrade smoothness and compaction. Without appropriately working and drying the in situ material Jergens could not achieve compaction requirements either. It appears to the Board only when ODOT realized Jergens was not willing to or capable of getting the material dried out enough to compact in time to get the roadway opened to traffic by the end of 2009, did ODOT begin working on an alternative subbase design.

The Board did not hear any evidence the material actually on the project differed from the soil borings in the plans. The Board reviewed the soil borings and concluded the Contractor should have expected a reasonable amount of work to manipulate the in situ soil to get compaction. If unevenness of the subgrade did result in additional 304 and 446 material, the work to achieve an even subgrade, at the proper elevation, was the responsibility of Jergens. In fact, Jergens acknowledges this in an e-mail from Vic Roberts to Scott LeBlanc on December 18, 2009 "...it's more important to fill the subgrade than to worry about trivial extra costs that Jergens will incur to reshape the subgrade! We realize that we'll have to over-excavate to create positive drainage. And we'll probably use extra gravel. So What! Looking at the big picture, these are minor costs that Bill Jergens will absorb. We need to fix the subgrade right, and to do it right now." In another e-mail Vic Roberts tells Scott LeBlanc: "When the top couple-of-inches of surface freezes, we can peel-it-off and replace it with gravel (at our cost)." Obviously, at the time, Jergens made a conscious business decision to accept the cost of additional material rather than spend the time and money getting the subgrade accurate.

The Board acknowledges ODOT redesigned the subbase on this project. ODOT has the right to make changes to the plans and will reimburse a contractor for any costs which may result from such a change. Jergens agreed to perform the subbase redesign (6" of 304 aggregate over 10" of #2 stone) at the same price it bid to do the original plan design (16" of 304 aggregate) except for the additional cost of the geotech fabric ($1.15/SY). ODOT's e-mail of November 17 from Rod Karns to Vic Roberts states: "All is a go. ODOT will write a change order for the additional costs of the fabric and delete an equal value of plan undercut." And Vic Roberts replies back that same day: "Thanks! I called Roger and told him to please proceed with the new plan." Obviously, at the time of the Work Jergens was in agreement with ODOT's redesign and method of payment.

The Board finds ODOT's theory that the fines in the 304 material will choke off the top of the #2 material, limiting the amount of piping, more reasonable than Jergens' theory the 304 material will continually pipe into the #2 material. If this was the case much more 304 material would have been used. The District paid 205 CY of 304 material to account for the transfer of the 304 material into the #2 material. This quantity was based on void space guidance provided by ODOT's Office of Materials Management, Aggregate Section. The District was able to account for the "missing material" to within 4 CY or less than 0.1% of the total used by comparing actual subgrade profile measurements to planned profile.

The Board finds the District has paid the appropriate quantity of 304 aggregate.

There was no argument that an unplanned scratch course of 446 material was required to correct grades due to the Contractor's choice to change the project phasing and Maintenance of Traffic plan. ODOT's profile check of the intermediate course supports the need for this scratch course. ODOT's diary of July 29, 2010 includes the following in the General Remarks: "Contractor placing scratch course. Material was not being laid to grades marked on pavement. Notified Contractor that scratch was too thick. Foreman ignored ODOT's notification. Dave Ley notified Scott Pearson of situation."

Elevations taken on the surface course throughout the project and documented on the as-built drawings show variances from plan in excess of 2". A quick calculation by the Board shows an overage of as little as 0.60" across the entire project would account for the additional 225 CY of 446 material. In addition, asphalt placed in modified phase 2 was too high and required milling to remove. Review of the District's elevation documentation convinces the Board the Contractor did not have proper elevation control in place. Without those controls there is no control of quantity.

Both parties agreed currently this section of South Dixie Highway is functioning properly and is in good shape over a year after being opened to traffic. Test results show the 446 material met the compaction requirements. This 100% density could not have been achieved on a soft, uncompacted subgrade and subbase. The Board does not accept Jergens' reasoning soft subgrade and soft subbase caused the need for additional 446 material when presented with these density test results. The need for extra 446 material is more reasonably explained by lack of elevation control by the Contractor.

The Board finds the District has paid the appropriate quantity of 446 asphalt material.

DAMAGES:
Based on the above findings, the Contractor is not entitled to additional compensation. This recommendation is submitted this 8th day of January 2013.

Director's Claims Board:

Gary E. Angles

Gary Angles, P.E.
Construction Engineer and Administrator
Division of Construction Management

Rachel Lewis

Rachel Lewis, P.E.
Administrator, Office of CADD and Mapping
Division of Engineering

Keith Geiger

Keith Geiger, P.E.
District 5 Construction Administrator

Approval of this recommendation:

Jerry Wray /MO

Jerry Wray
Director, Ohio Department of Transportation

1/10/13
Date