DISPUTES REVIEW BOARD RECOMMENDATION

25 February, 2010

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Ref: SH16 over SH85; Colorado Department of Transportation Project No. NH016A-039: Dispute Review Board hearing regarding Merit to the Flow- fill requirement for storm sewer pipe issue.

Dear Madam and Sir:

The Colorado Department of Transportation, (CDOT), and Hamon Contractors, Inc.(HCI), requested a hearing concerning the above referenced issue.

**CONTRACTORS POSITION**

We will state the Contractors position by referencing, copying and paraphrasing their position paper and input from the hearing. Should the reader need additional information please see the complete position paper by the Contractor.

The Contractors position paper has the following statements and references to document their claim for merit to the flow-fill issue.

"Hamon contends that there is an error in the plans, that the quantity for flow-fill was not included in the revised Summary of Approximate Quantities and that the Revision of Section 206, Structure Backfill (January 9, 2009) did not specifically state that structure backfill for storm sewer pipe was included in the work. It is desired that the Dispute Resolution Board (DRB) determine merit.

**There is no requirement to use flow-fill to backfill storm sewer pipes, and contrary to CDOT's position, the plans and specification do not clearly indicate that flow-fill is required for the backfilling of storm sewer pipe and that it will not be paid for separately but shall be included in the work**

Section 206.02 only requires flow-fill as backfill in abutments to the extent delineated in the project plans.

1. Section 206.02(a) of CDOT's Standard Specifications states: "Structure backfill (flow-fill) ... shall be used to backfill bridge abutments."
2. The only way for a Contractor to determine the limits of any of the backfill materials quantified at the bridge abutments is by reference to the limits defined on the drawings. Also, in spite of the fact that CDOT Standard Specification 206.02(a) requires backfill behind bridge abutments, the only way to determine if CDOT requires structure backfill flow-fill behind a specific bridge abutment, and to what extent the flow-fill is to be installed is by reference to the limits defined on the drawings.
3. Therefore, Standard Specification 206.02(a), in practice, requires flow-fill to "... be used to backfill bridge abutments ..." only insofar as it is delineated on the drawings.
4. The same holds true for the use of flow-fill to backfill storm sewer pipes and when one views the relevant plans and specifications for our project as a whole, the only logical conclusion is that flow-fill is not required to backfill storm sewer pipes.

The January 9, 2009 Revision to CDOT Standard Specification 206.02(a)  
fails to satisfy CDOT's own standards and prior practices employed when deviating from the standard structure backfill requirements.

The Bid Date for our project was January 15, 2009. On January 9, 2009, some 4 working days before the bid date, CDOT issued a Revision to Standard Specification 206.02(a) which reads: "Structure backfill (flow-fill) ... shall be used to backfill bridge abutments, storm sewer pipe and culverts." Revision of Section 206.02(a) does not state that all storm sewer pipe is to be backfilled with flow-fill. Further, Revision 206.02(a) fails to delineate which storm sewer pipes are to be backfilled with flow-fill and it fails to delineate the extent to which the storm sewer pipes are to be backfilled with flow-fill.

As an aside, Hamon questions CDOT's practices in its alleged attempt to make flow-fill the required backfill material for storm sewer pipes. To accomplish this task, all that CDOT did was to issue a revision that added three words to a set of project plans and specifications containing hundreds of pages and thousands of words — no companion plan sheets were provided indicating a flow-fill requirement. Second, CDOT failed to use underlining, redlining, bolding or other similar markings to notify bidders of the three word change to Revision of Section 206.

When one looks at the relevant plans for our project, one does not see excavation and backfill patterns requiring the use of flow-fill to backfill storm sewer pipes. Put simply, there is no evidence in the plans establishing a requirement for flow-fill for storm sewer pipes.

Further evidence that flow-fill was never required as backfill for storm sewer pipes comes in the form of an agreement the parties entered into in the spring of 2009.

After numerous discussions, the parties agreed that the backfill of storm sewer pipe located outside the roadway prism will not be required to be flow-fill, but will be backfilled according to Paragraph 4, Section 206.03 of the Standard Specifications. a May 7, 2009 email from CDOT's Rich Gonser to Hamon's Muriel Agnelli). This agreement establishes the fact that CDOT never believed that flow-fill should be used to backfill storm sewer pipes.

CDOT Standard Specification 206.07 states that structure backfill (flow-fill) shall be paid by the cubic yard if it appears in the bid schedule. Here, it is undisputed that flow-fill appears in the bid schedule. And as stated above, CDOT is currently paying for flow-fill by the cubic yard."

**DEPARTMENT’S POSITION**

We will state the Department’s position by referencing, copying and paraphrasing their position paper and input from the hearing. Should the reader need additional information please see the complete position paper by the Department.

The Department’s position paper has the following statements and references to document their claim for no entitlement to merit on the flow-fill issue.

"It is the position of the Colorado Department of Transportation (CDOT) that Structure Backfill (flow-fill) is the required material for backfilling storm sewer pipe and that the cost of Structure Backfill (flow-fill) is NOT paid for separately, but is included in the prices for RCP.

CDOT specified the use of flow-fill as the required material to backfill the Reinforced Concrete Pipe (RCP) on the project for several reasons including the following:

1. To insure there would be no compaction issues under the haunch of the pipe.
2. To promote the safety of the workers installing the pipe and COOT employees required to test the backfill if Structural Backfill Class I Type I material backfill was used.
3. The placement of flow-fill would be easier and more efficient to place.
4. Flow-fill was specified and used successfully on Phase I of the project - CDOT Project No. STU R200-110.
5. Reduce the need for over excavation of the pipe trenches by limiting width of trench excavation to 6 inches wider than the pipe on both sides rather than 18 inches on both sides as required in the CDOT M&S Standard Plans.

To make it clear that CDOT wanted flow-fill for the use of backfilling the Reinforced Concrete Pipe (RCP), CDOT issued a second Revision of Section 206 dated 1/09/09. This revised specification explicitly states that Structure Backfill (flow-fill) shall be used to backfill storm sewer pipe.

After several discussions between CDOT and Hamon concerning this issue, on May 7, 2009 CDOT attempted to mitigate our differences by allowing Hamon to backfill the storm sewer pipe outside the roadway prism according to Paragraph 4, Section 203.06 of the Standard Specifications. Given the   
reasons noted above as to why CDOT specified the use of flow-fill in the first instance, CDOT continued to require that Hamon use flow-fill for the storm sewer pipe within the roadway prism.

Standard Specification 206.07 expressly states: "Structure backfill, including bed course material, for pipes and end sections will not be measured and paid for separately, but shall be included in the work". The January 9, 2009 Revision to Subsection 206.02 mandated that Structure Backfill {flow-   
fill} be used to backfill all storm sewer pipes.

Because the contract expressly states that structure backfill will not be measured and paid for separately with regard to pipes, no roadway quantity for Structure Backfill (flow-fill) was placed on the Summary of Approximate Quantities, Plan Sheet 18. There is no error on Plan Sheet 18.   
Notably, the original Plan Sheet 18, before any revisions also does not list any roadway quantities for Structure Backfill (flow-fill), which also indicates no separate pay item.

In order to address the Contractors' question, "Will flow fill be required for the backfill of storm sewers?" CDOT issued a Revision of Section 206, Structure Backfill of the Project Special Provisions, dated January 9,2009. CDOT added "storm sewer" in subsection 206.02(a) after the bridge abutments to clarify that the required backfill was flow-fill. Notably, the January 9, 2009 Revision also modified subsection 206.07 "Basis of Payment" to include the following: "Structure excavation and structure backfill required for all culverts and extensions will not be measured and paid for separately, but shall be included in the work." A "storm sewer" is a "culvert" (see CDOT Standard Specification 101.25.

The contract documents clearly and unambiguously provide that: (1) backfill for culverts will not be measured and paid for separately; and (2) backfill for storm sewers, a type of culvert, will be flow-fill. However, should the DRB wish to look beyond the four corners of the contract documents for meaning, Hamon's previous interpretation of those documents is telling. Hamon submitted its Method Statement for constructing the Storm Drain System as required by Section 108 of the Standard Specifications. This Method Statement states "The trench shall be backfilled with material in accordance with Section 206 - Flowfill." This statement indicates Hamon knew flow-fill was required for the backfilling of the RCP.

Hamon contends the contract documents do not state that ALL storm sewer pipes shall be backfilled with flow-fill. However, Revision of Section 206 states "Structure backfill (flow-fill) meeting the following requirements shall be used to backfill bridge abutments, storm sewer pipe and culverts", without any exclusions. Bid items with the 603 item code, correspond to section 603 of the specification, "Culverts and Sewers" were to be backfilled with flow fill. Those bid items with the 619 item code, corresponds to section 619 of the specifications, "Water lines" , were to be backfilled in accordance with Widefield Water and Sanitation District specifications, as these were not listed in the Revision of Section 206 or the Revision under advertisement requiring flow fill."

**FINDINGS OF FACT**

The Board’s decisions are governed by the plans, specifications (standard, supplemental, technical, special), and the contract. Therefore our recommendation is based on the above referenced documents, the hearing, and the following facts.

1. Revision of Section 206 Structure Backfill dated January 9, 2009 states that Section 206 of the Standard Specifications is hereby revised for this project as follows: Delete subsection 206.02, and replace with the following:

(*a) structure backfill (flow-fill) meeting the following requirements shall be used to backfill bridge abutments, storm sewer pipe and culverts.*

2. Revision of Section 206 Structure Backfill dated January 9, 2009 states that: Subsection 206.07 shall include the following:

*Structure excavation and structure backfill required for all culverts and extensions will not be measured and paid for separately, but shall be included in the work*.

3. The revision to subsection 206.02 clearly states what backfill is to be used for three specific operations, bridge abutments, storm sewer pipe and culverts.

4. Subsection 206.07 of the Revision to Section 206 only addresses the payment method for culverts and extensions, not storm sewer pipe. Subsection 206.07 states: *Structure excavation and structure backfill required for all culverts and extensions will not be measured and paid for separately, but shall be included in the work.*

5. Subsection 105.08 Standard Specifications states that in case of discrepancy the order of precedence is as follows:

*(a) Special Provisions*

*1. Project Special Provisions*

*2. Standard Special Provisions*

6. In an e-mail from the Department to Hamon dated May 7, 2009 at 3:56PM the Department agreed that "the backfill of storm sewer pipe located outside the roadway prism will not be required to be flowfill". This decision is not consistent with the order of precedence of the contract documents. The Department's stated position is that the Revision to Section 206 means flow-fill for all storm sewer pipes, not just the roadway sections of storm sewer pipes.

7. In a response to an e-mail from SEMA Construction requesting clarification of the structure backfill (flow-fill) the Department responded that "The flowfill requirements in the special provisions apply to all items (culverts and pipes) associated with the storm drain system. This does not apply to sanitary sewer or water lines: they would follow their district standards". This very clear and defined definition did not become part of the contract nor was it part of the bid documents for bidders to base their bids on.

8. Section 603 of the Standard Specifications Culverts and Sewers under description states that "*This work consists of construction of culverts, storm drains, and sanitary sewers hereinafter referred to as "conduits"....* However in the Specifications and the contract the Department uses all three terms independently, not as conduits. The Revision to Specification 206 did specifically name storm sewer pipe and culverts requiring flow-fill.

9. Subsection 101.25 of the Standard Specification defines culvert as *"Any structure not classified as a bridge which provides an opening under the roadway".* This definition would universally include any piping (sanitary, water, telephone, gas, electric) going under the road. If this definition were taken literally then all "openings under the roadway" would require flow-fill based on the Department's interpretation of the Revision of Section 206 dated 9 January, 2009. The Board does not have any documentation that the Department tried to have all "openings" to have flow-fill.

10. There appears to be a significant ambiguity between the specifications, intent, method of payment and definitions for the use and payment of structure backfill (flow-fill) called for in the Revision of Section 206. The Revision specifically calls for flow-fill to be used for bridge abutments, storm sewer pipe, and culverts. Three distinct operations. The method of payment in the Revision addresses only culverts and extensions. If the literal interpretation of the definition of culvert as used in Subsection 101.25 were to be applied then all openings under the roadway would be required to have flow-fill. No documentation was provided to the Board to indicate that the Department tried to enforce that definition. The only information regarding not including utilities in the flow-fill requirement was a response to an e-mail from a contractor dated December 30, 2008 where the Department stated, "this does not apply to sanitary sewer or waterlines: they would follow their district standards". According to Hamon Contractors this information was not provided to them prior to bidding.

**RECOMMENDATION**

The Board finds that there is merit to the issue of structural backfill (flow-fill). This recommendation is based on the above listed facts which show ambiguity in the specifications.

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

The Board unanimously reached the recommendation and reminds the parties that it is only a recommendation. The time frame for acceptance or rejection shall be in accordance with Revision of Section 105: Disputes and Claims for Contract Adjustments dated January 17, 2008.

Submitted by the Disputes Review Board

Don Henderson, Chairman William Ashton, Member Tom Pawlish, Member

Signed for and with concurrence of all members



Don Henderson, PE